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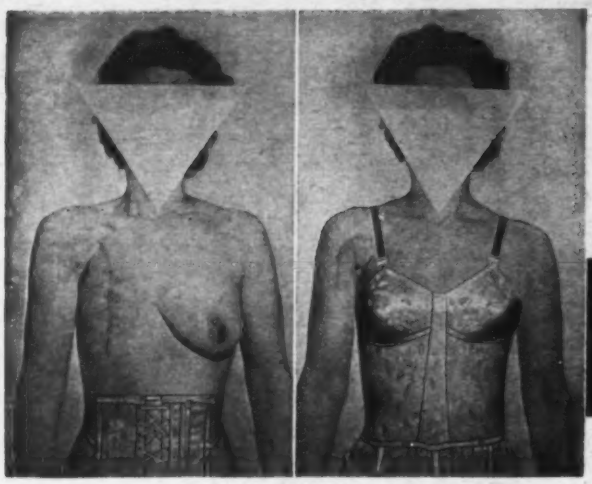

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BRITISH MEDICAL JOURNAL

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TREATMENT OF ADRENOCORTICAL DEFICIENCY STATES

BY

F. DUDLEY HART, M.D., F.R.C.P.

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The treatment of adrenocortical deficiency states has been completely revolutionized since the advent of the new adrenocortical steroids. The discovery by Hench, Kendall, and others in 1949 of cortisone as a therapeutic agent marked an advance into a new therapeutic era. Now that adrenal substitution therapy is a practical measure, adrenalectomy for a variety of disorders has become increasingly popular. Total or subtotal adrenalectomy is now orthodox therapy for Cushing's syndrome, and total adrenalectomy has also been extensively used in the treatment of metastatic malignant disease and of malignant hypertension; it has also been empirically performed in the treatment of a number of disorders: diabetes mellitus, schizophrenia, and rheumatoid arthritis, to mention three. Substitution therapy has therefore become a day-to-day problem in the wards of many hospitals, and, as a natural sequence, the treatment of adrenocortical crisis has become more common than it used to be.

The tempo of practical therapeutics is now so rapid that by the time a new effective form of treatment is evolved and applied in medicine its probable successors are already on the scene, as yet incompletely studied and unproved clinically. This is particularly so in the adrenal-deficiency states, where steroid chases steroid across a constantly changing scene. We have passed from the time of high-salt treatment, through the cortical extract era, from the deoxycortone to the cortisone age, and are now in the happy position of having many practical tools, all of proved efficiency. In spite of this, many patients with adrenal deficiency still lag behind somewhere on this therapeutic pathway; to-day brown lethargic Addisonian patients, on deoxycortone alone, resemble the partially treated patients of the pre-1949 era. Such patients are by no means rare even at the time of writing.

The clinical material which forms the basis of this study consists of 150 patients, 5 adrenalectomized for malignant hypertension, 2 for Cushing's syndrome, and 143 for metastatic malignant disease. Details of these cases have been published by Sir Stanford Cade (1954, 1955). Of the metastatic cases, 65 have survived and have been followed-up for more than six months to September, 1956. The number of "survival years" of these 65 cases now totals 85.3. The two patients with Cushing's syndrome are in good health, four and one year after operation. Of the patients with malignant hypertension only one survives after two years; the others lived 10, 12, 19, and 12 months after operation. The details of these five patients, all under the care of Dr. Swithin Meadows, have been reported by Van T'Hoff (1956).

Sodium Loss, Cortisone Deficiency, and Water Intoxication

The classical symptoms of adrenal deficiency are increasing weakness, lassitude, and inability to respond to any form of stress, followed by vomiting, diarrhoea, prostration, and finally coma. The blood urea rises as the serum sodium falls; the serum potassium rises steadily as the patient becomes depleted of salt and water. These symptoms are, however, found only typically in a minority of patients; in most cases the early signs and symptoms are more subtle and less easy to define.

In the adrenal-deficient subject, particularly in the adrenalectomized subject suffering from metastatic malignant disease, the variables with which the clinician has to contend daily are: (1) the salt-and-water balance; (2) the cortisone requirements; and (3) the activity of the underlying (malignant) disease process.

The clinical and biochemical picture may change rapidly overnight in these severely ill patients. Intercurrent infection, extreme pain from involvement of a fresh structure by the neoplastic process, vagaries of appetite and thirst, and, particularly, gastro-intestinal upsets may all rapidly and thoroughly upset the delicate balance of the adrenalectomized subject. The symptoms and signs of imbalance in each of the above—water, sodium, and cortisone—may be very similar; symptoms due to neoplastic extension may also cause a similar clinical picture. To illustrate this point, apathy, anorexia, nausea, and vomiting may be due to water intoxication, sodium loss, cortisone deficiency (absolute from the usual dosage being omitted, or relative in the face of cross-infection or some other stress), or extension of the malignant process. If these symptoms are initiated by extension of the neoplastic process they may in turn cause sodium deficiency and/or water loss and/or hypocorticism (relative cortisone deficiency).

The commonest early symptoms of cortisone deficiency are, in our experience, apathy, lassitude, nausea, anorexia, and a general lack of well-being, followed later by vomiting. The blood urea usually rises, but not invariably at this early stage, and the blood pressure usually, but not always, drops. The pulse usually increases, and the pulse pressure lessens. Exactly the same symptoms and signs may herald sodium deficiency;

the two commonly go hand in hand, though by no means invariably, for a patient on a high dosage of cortisone may, for instance, lose large amounts of sodium in the urine and be overtreated with cortisone while still deficient in sodium and in negative sodium balance. Conversely, the patient may suffer cortisone withdrawal symptoms before electrolyte changes are manifestly apparent.

The clinical picture in water intoxication may be very similar to that seen in hyponatraemia, the essential difference being that all blood constituents are diluted in water intoxication and oedema appears with increasing gain in body weight. The appearance of the patient is usually relatively normal in water intoxication (Wynn, 1956), while the sodium-depleted patient is haggard, with inelastic skin. The two conditions may not, however, be easy to differentiate, and hyponatraemia and water-loading may coexist. Cortisone in this water-intoxication syndrome in adrenalectomized subjects may act as a diuretic agent, and while fluid intake is reduced produces brisk diuresis. It is of interest that Pearson *et al.* (1953) found that as a result of experimental withdrawal of cortisone in adrenalectomized patients water intoxication occurred and was, in their opinion, an important feature of adrenal insufficiency. The danger of fluid overloading is a real one in such patients; Hollander *et al.* (1952) quote two instances where death from pulmonary oedema occurred as a result of excessive intravenous infusions.

Salt-retaining Agents

The only treatment for adrenal deficiency prior to the advent of cortisone in 1949 lay in increasing the salt intake in the diet and in giving drugs to cause salt retention; deoxycortone was the most effective agent in this respect. Cortisone and hydrocortisone, though relatively weak sodium-retaining agents, may prove adequate for some patients, but recently many new potent mineralocorticoid substances have been discovered. Aldosterone, for instance, exerts a physiological action in the transport of sodium, potassium, and hydrogen ions by renal tubular and other cells, and is of importance in the normal control of fluid and electrolyte balance. Its secretion is controlled by "a function of extracellular fluid volume, a function of potassium ions, and less importantly, by corticotrophin" (Bartter, 1956). It is a naturally occurring substance, and was isolated in 1952 from the active amorphous fraction of the adrenal cortex (Simpson and Tait, 1952). It has been found both in adrenal venous blood and in peripheral blood, in the urine, and in adrenal cortical adenomata. Its effect on renal sodium and potassium excretion is some 30 times that of deoxycortone. It is the most potent sodium-retaining potassium-eliminating hormone yet found in cortical extract, blood, or urine (Luetscher and Curtis, 1955).

In adrenalectomized man, however, Maclean *et al.* (1955) found that, on withdrawing cortisone, aldosterone given alone did not prevent signs of adrenal deficiency setting in acutely within 36 hours. They state: "The adrenal salt hormone (aldosterone) in man appears to be necessary for the prevention of sodium depletion during severe dietary restriction or excessive extrarenal loss. Its role, therefore, is minor in comparison with hydrocortisone, which is necessary for life maintenance."

In a search for analogues of cortisone and hydrocortisone 9α-fluorohydrocortisone and 9α-chlorohydrocortisone were found to be far more potent salt-retaining agents than hydrocortisone itself. It was later found that in steroids possessing an 11-β hydroxyl group (hydrocortisone and 9α-fluorohydrocortisone) the addition of the 2-methyl group greatly enhanced sodium-retaining and potassium-losing activity; a most potent member of this series, 2-methyl-9α-fluorohydrocortisone is said to be 90 times as potent as deoxycortone and three times as powerful as aldosterone (Byrnes *et al.*, 1956; Liddle *et al.*, 1956). The delta analogues, prednisone and prednisolone, on the other hand, are weaker in this respect than cortisone and are relatively stronger glucocorticoids and weaker mineralocorticoids. Most of these new substances are therefore too powerful or too weak salt-retaining agents for adequate substitution balanced therapy in the adrenal-deficient subject, and to date it is necessary to "load" cortisone or hydrocortisone slightly by adding small amounts of a mineralocorticoid—usually deoxycortone or 9α-fluorohydrocortisone. The perfect substitution agent is still awaited; to-day cortisone or hydrocortisone comes nearest to being the ideal single replacement agent.

Deoxycortone

Deoxycortone (D.C.A.; desoxycorticosterone acetate) may be given by pellet implantation or by intramuscular injection. Deoxycortone trimethyl acetate is given as a crystalline "depot" injection, which, slowly absorbed, has a prolonged action over a period of two to three weeks, and the humble 1 mg. "linguette" is absorbed through the buccal mucosa. We used these preparations, particularly the last two, until two years or so ago, but now rarely use any except the sublingual form and very occasionally the intramuscular daily injection. The sublingual form has one great advantage: though a very weak preparation, it is rapidly absorbed, and its effect becomes apparent to the patient within a few hours.

Morning nausea or vomiting can be a sign of sodium depletion, and if a sublingual tablet taken nightly or night and morning removes these symptoms better than promethazine-8-chlorotheophyllinate ("avomine") or chlorpromazine it points strongly to sodium deficiency as the cause. The sublingual tablet can be used in this way not only as a therapeutic weapon but also as a diagnostic pointer. To salt-losing Addisonian patients and adrenalectomized subjects, though a weak preparation, it is usually enough to control, or at least modify, the early symptoms of sodium deficiency if given with cortisone or hydrocortisone. The implant is too blunt a weapon and its control is too remote for the patient adrenalectomized for metastatic malignant disease, whose condition can fluctuate erratically from one day or week to the next. In such patients the intramuscular daily injection where dosage can be regulated daily is useful in acute salt-losing phases, but we now prefer the more powerful and more easily administered 9α-fluorohydrocortisone.

9α-Fluorohydrocortisone

9α-fluorohydrocortisone was introduced by Fried and Sabo in 1954. It is a highly potent substance; Thorn *et al.* (1955) estimate that it is at least 50 times as active as hydrocortisone in its electrolyte-regulating capacity, some 20 times as active in its "organic-regulating potency." Used alone it has proved far too potent a salt- and fluid-retaining substance to be of practical use, though some severely ill salt-losing patients adrenalectomized for metastatic malignant disease have done well on it. Unless used in minute amounts the patients gain weight and become oedematous, and if the dosage is scaled down until this disadvantage is overcome signs of adrenal deficiency may appear; we have seen this occur on more than one occasion. The salt-retaining (mineralocorticoid) action being relatively weaker than the wider glucocorticoid effect, features of Addison's disease, such as weakness and repigmentation, may occur at a dosage level fully adequate for salt balance.

9α-fluorohydrocortisone given in small amounts in conjunction with cortisone has proved in our hands and those of others (Garrod *et al.*, 1955) extremely useful in balancing adrenal-deficient, salt-losing patients. The tablet we commonly use contains 20 mg. of cortisone acetate plus 0.125 mg. of 9α-fluorohydrocortisone. Experienced patients are often able to tell the signs of salt and/or cortisone deficiency (see Case 1), and we have found a useful general measure

is to give such patients three sets of tablets. They are instructed to take cortisone 25 mg. twice a day, and if mild symptoms of salt deficiency occur to take a fluorohydrocortisone-cum-cortisone tablet in place of a cortisone tablet every day, every other day, or every three to four days, depending on their symptoms. If, on the other hand, acute deficiency symptoms occur they are instructed to take a 1-mg. tablet of 9α-fluorohydrocortisone for a few doses until symptoms are controlled. With this "three-tablet" scheme many patients are able to avoid the acute crises which previously took them to hospital, and only if vomiting makes oral therapy impossible or an acute crisis occurs in spite of the above treatment are other measures such as intravenous hydrocortisone needed. 9α-fluorohydrocortisone, though not yet generally available, is an extremely useful additional substance in the treatment of those adrenalectomized subjects in whom cortisone given alone does not prevent the development of a negative sodium balance.

Liquorice Root and its Extracts

There is considerable evidence that liquorice and some of its extracts have, given orally, a deoxycortone-like action. Molhuysen *et al.* (1950) found that water, sodium, and chloride retention occurred with increase in weight and rise in blood pressure and an increase in potassium urinary excretion. Card *et al.* (1953) confirmed these effects on normal subjects and showed that glycyrrhetinic acid had a similar effect. These workers demonstrated that, unlike deoxycortone, glycyrrhetinic acid did not prolong the survival time of adrenalectomized rats. Groen *et al.* (1951, 1952) reported the successful control of two cases of Addison's disease treated by liquorice extract and glycyrrhizinic acid, and a further case successfully controlled for over a year on liquorice extract alone is reported by Calvert (1954). Borst *et al.* (1953) made the interesting observation that some cases of Addison's disease did not respond unless a small dose of cortisone was added, and they concluded that cases of Addison's disease which respond to liquorice alone probably have some functioning adrenal cortical tissue left and that liquorice acts as substitution therapy only if small amounts of glucocorticoid are also present.

Hudson *et al.* (1954) found that glycyrrhizin given alone was not enough to maintain three adrenalectomized subjects in health, but that given in conjunction with cortisone the dose of the latter substance could be reduced; on glycyrrhizin alone signs of hypoadrenalism came on gradually after one to two weeks. Mitchell (1956) quotes Hems as failing to find any glucocorticoid action when both glycyrrhizinic acid and glycyrrhetinic acid were tested by the rat-liver glycogen test. The general impression of most workers is that, while having a salt-retaining and water-retaining action these substances have either no glucocorticoid action or insufficient to maintain Addisonian patients in health.

Louis and Conn (1956) used ammonium glycyrrhizinate orally in man; in addition to its known action in inducing water, sodium, and chloride retention and producing a mild increase in urinary potassium they found that it consistently decreased excretion of urinary 17-ketosteroids and was capable of inhibiting pituitary release of melanocyte-stimulating hormone—that is, that it was capable of depressing endogenous production of both corticotrophin and M.S.H. in the pituitary. Galal (1955) concluded as a result of animal experiments that glycyrrhetinic acid, given by any route, had an antidiuretic effect rather than a true deoxycortone-like one.

Used in adrenalectomized subjects in conjunction with cortisone, glycyrrhetinic acid has proved in our hands a weak mineralocorticoid, causing some retention of sodium and chloride, but a stronger water-retaining substance. If dosage of glycyrrhetinic acid be raised to 500 mg. daily the cortisone-treated patients will rapidly gain weight and become oedematous; we have twice seen, in our patients, water-loading occurring in the face of persistence of signs of salt deficiency. Galal suggests that this water-loading effect is not mediated through the posterior pituitary, but is probably a direct effect on the renal tubules, stimulating reabsorption of water. The rather variable effects with various preparations of liquorice may well be because of batch variations, for many of these preparations are as yet far from being pure substances.

Addison's Disease

The reason for many of the failures to restore normality in Addisonian patients lies in an inadequate dosage of cortisone. Although small doses of 12.5 mg. with additional deoxycortone may enable the Addisonian patient to live in sodium balance, she will remain often lacking in energy, resisting infections indifferently, and remaining deeply pigmented. Since 1951 we have aimed at full physiological replacement—37.5–50 mg. of cortisone daily by mouth. The early-morning dose being the more important, it is common practice to give the larger dose, 25 mg., at this time, for it is in the morning that the patient feels the need of cortisone more particularly, and there is evidence that in the normal man adrenocortical secretion is highest at this time. On full dosage the patient improves remarkably, and gradually loses her abnormal pigment from skin and buccal mucosa. The change from the thin pigmented state to the plump pink one has a great psychological effect on the patient quite apart from the physical well-being that goes with it.

Cortisone alone in the above dosage may be enough to maintain the patient in good general health. Although it has only one-fiftieth to one-thirtieth the salt-retaining effect of deoxycortone, this seems to be enough for many patients, but there appears to be considerable variation in individual requirements in this respect. Some patients clinically normally balanced and symptom-free are found to be in negative sodium balance (Garrod *et al.*, 1955) when investigated more thoroughly, but in practice many do not appear to need a salt-retaining substance as a routine day-to-day measure. Case 2 is of interest in this respect.

Many potent sodium-retaining substances have been discovered in the last few years, and though deoxycortone acetate may still be used in its various forms we have far more potent substances in aldosterone, 9α-fluorohydrocortisone, and 2-methyl-9α-fluorohydrocortisone. None of these substances are as yet generally available for therapy, but we have used 9α-fluorohydrocortisone extensively and are impressed by its usefulness. Our practice is to start the Addisonian patient on 37.5–50 mg. of cortisone acetate a day by mouth and only to add salt-retaining substances if the need becomes apparent. As with the adrenalectomized patients, pamphlets are given explaining the rationale of the therapy and the need for increased dosage in times of stress.

Adrenal Crisis

Adrenal crisis was once rare and almost confined to Addison's disease. In these days of more frequent adrenal surgery it is not uncommon. It may be seen in a variety of different forms (Hart, 1956): (1) during or after adrenalectomy if therapeutic cover is inadequate; (2) in Addison's disease; (3) rarely in Simmonds's disease; (4) in adrenal apoplexy (Waterhouse–Friderichsen syndrome); (5) in the face of severe stress after adrenalectomy—that is, relative cortisone deficiency; and (6) in the face of severe stress in non-adrenalectomized subjects whose adrenal cortices have been depressed by prolonged cortisone therapy, as in long-term therapy of rheumatoid arthritis.

The diagnosis, as mentioned below, must not be confused with that of water intoxication, where the patient has been overhydrated. In the acute form of this (water intoxication) syndrome marked mental disturbances occur, with disorientation, weakness, fits, and even coma; such cases can prove fatal and must be clearly differentiated from the true adrenal crisis before therapy is initiated. In the treatment of adrenal crisis hydrocortisone (free alcohol or hemisuccinate) may be given intravenously; Lundy (1955) has

reported on the use of water-soluble hydrocortisone. Cortisone acetate by mouth may be vomited, and by the intramuscular route is too slow in action. We usually give 100–300 mg. of a suitable preparation of hydrocortisone in a saline infusion over a period of some 6 to 24 hours, but it may be given in severely prostrated ill patients more quickly and in larger amounts than this. In severe salt-losing cases in crisis we have given 9α-fluorohydrocortisone intravenously in one-twentieth the dose of cortisone given above with good results.

The Adrenalectomized Subject

The three groups of patients adrenalectomized for metastatic carcinomatosis, Cushing's syndrome, and malignant hypertension behave very differently as regards their subsequent balance on substitution therapy. In the case of the last-named (hypertensive) group, it has been our impression that the pre-operative and operative cover needed is greater than in the other two groups, for they seem to tolerate the operation less well and to need more cortisone in the first post-operative few days. Their subsequent day-to-day replacement therapy has been 50 mg. of cortisone acetate by mouth; no additional salt-retaining substance was given or apparently needed in any case. Dr. Van T'Hoff deliberately tried to lower at different times both salt and cortisone in an attempt to produce lowering of the blood pressure, which had remained unchanged at the previous high level after operation, without achieving this result. In these cases, all males, it proved impossible to render them normotensive without definite signs of cortisone and salt deficiency occurring. Although blood pressure was unchanged after total adrenalectomy, the patients nevertheless improved greatly; it was as though the malignant features were relieved and the patients suffered thereafter from simple essential hypertension. On 50 mg. of cortisone acetate daily no signs of sodium deficiency were apparent, and at this dosage level progress was relatively uneventful, salt rations not being severely restricted but largely left to the patient.

In Cushing's syndrome control has been achieved in these two cases by cortisone alone, no salt-retaining substance being given. In the second of these (Case 3) it appeared as though the patient needed some weeks to adapt gradually to a normal steroid level, her presenting signs and symptoms of hypocorticism being tachycardia, xeroderma, and lassitude. For a month post-operatively her daily requirement appeared to lie well above 50 mg. of cortisone; though low-grade wound infection may have been responsible there was never any sign of it. No such period of adaptation was apparent in the first case, which responded rapidly and effectively to normal dosage, and of the two cases of Cushing's syndrome this was the more severe and ill. Every new therapeutic substance has been tried in replacement therapy in this most co-operative subject; on 9α-fluorohydrocortisone, 1 mg. twice daily, he became water-loaded at the same time as several features of Cushing's syndrome reappeared—moonface, lassitude, headache, and hypertension. All these rapidly disappeared within a few days of stopping this form of therapy. This gallant patient has been maintained on cortisone only—50 mg. daily for four years. At one time he was admitted in coma having inadvertently taken an overdose of a barbiturate—20 gr. (1.3 g.)—and having missed a day's cortisone therapy. On gastric aspiration and intravenous hydrocortisone he rapidly recovered. The hypertension present in these cases as part of Cushing's syndrome, unlike the cases of malignant hypertension quoted above, rapidly returned to normal and remained so after operation. In all the cases of malignant hypertension and in this case of Cushing's syndrome, the retinopathy previously present improved greatly very soon after operation.

These two groups—malignant hypertension and Cushing's syndrome—have been no great problem as regards substitution therapy after the first few weeks. The same cannot be said of the cases of metastatic malignant disease, for the malignant process eventually recurs, the appetite disappears, and there is none of the day-to-day and week-to-week stability of the other two groups. Gastro-intestinal disturbances are common; one is dealing with a patient in whom activity of underlying malignant process, salt and fluid balance, and cortisone requirements are unknown daily variables. If episodes of cyclical vomiting occur before adrenalectomy in such patients, it is almost certain that they will also occur after this operation, and the use of a salt-retaining substance in addition to cortisone will probably be necessary from the start. Case 1 is interesting in this context.

Although metastatic involvement of the adrenal cortex was common in these metastatic patients, occurring in some 60% of cases (Cade, 1955), in no instance did it produce complete destruction and the clinical picture of Addison's disease. Addison's disease due to metastatic carcinomatosis is indeed very rare; in 354 proved cases of metastatic adrenal involvement (Sahagian-Edwards and Holland, 1954) only four clinical cases were seen.

Most of our adrenalectomized malignant cases have initially needed only cortisone; 50 mg. a day by mouth proved sufficient for almost all patients at first, but in the course of time, and particularly as the underlying malignant process exacerbated and spread and food and salt intake diminished, many cases needed a salt-retaining substance in addition. There was obviously a great individual variation; some patients, dying two years or more after operation, remained adequately balanced on cortisone alone, others soon became salt-deficient. Our practice was to maintain the patient on 50 mg. of cortisone daily, increasing the dosage in the face of stress of any sort and giving to each patient a pamphlet explaining the rationale of such increases. Should signs and symptoms of sodium lack become apparent deoxycortone and latterly 9α-fluorohydrocortisone was used as described above. In these adrenalectomized patients we were not impressed by any altered response to analgesics or hypnotics, and pain-threshold tests performed by Dr. C. J. M. Clark remained unaltered. Blood pressures were little changed and increasing pigmentation of Addisonian type was not observed. Intensive deep *x*-ray therapy, however, or radioactive gold greatly upset such patients; these forms of therapy appeared to act as a severe protracted form of stress, and cortisone dosage had to be greatly increased. There seems to be a very real risk in using these agents in patients deprived of their adrenal glands.

Case 1: Adrenalectomy for Metastatic Malignant Disease

A woman aged 45 had metastatic carcinomatosis from a malignant left breast, removed in 1948. Subsequently she was given teleradium therapy to a small hard gland in the supraclavicular fossa. Her condition deteriorated in 1953 and she developed multiple metastatic deposits in most of her bones and sustained pathological fractures of three ribs, a hilar gland mass, and paresis of the left phrenic and recurrent laryngeal nerves. From the end of June to the end of December, 1953, she was given testosterone therapy, a total of 2.550 mg. A bilateral oophorectomy was performed by Mr. Andrew Jessiman in March, 1954, and a two-stage adrenalectomy by Sir Stanford Cade the following month. Before this operation she had had occasional bouts of cyclical vomiting, and in the ensuing nine months she was readmitted on three occasions for rebalancing.

It rapidly became apparent that cortisone alone was not enough and that on it she became salt-deficient. She could be kept in good health on 50 mg. of cortisone daily by mouth, full salt rations, and one or two deoxycortone linguettes daily. She volunteered the interesting information that a deoxycortone linguette at night would prevent her feeling sick in the morning better than chlorpromazine, which had no effect. If this evening dose was omitted nausea recurred within 24 hours. She sustained a Colles fracture in January, 1955, which was dealt with without mishap

under a general anaesthetic and on increased cortisone dosage. When she was transferred to cortisone with minute amounts of 9α-fluorohydrocortisone her balance remained entirely satisfactory, but in November, 1955, an Addisonian-like episode occurred out of the blue without any obvious cause. Hydrocortisone (free alcohol), 200 mg. intravenously, restored her to normality and she was subsequently maintained on compound cortisone and fluorohydrocortisone tablets.

She observed that when she became salt-deficient her mouth was dry and somewhat sore, her tongue raw and red, and she felt limp and short of breath, with nausea in the early morning proceeding to vomiting if left untreated. Dryness and soreness of the mouth, increasing dyspnoea, and anorexia she took as the earliest warning signs of salt deficiency. She knew when she was "getting overloaded," as her abdomen swelled and she felt heavy. In her case this abdominal swelling appeared as the earliest sign of overdosage with 9α-fluorohydrocortisone, followed on one or two occasions by her shoes feeling tighter on her feet and her ring tight on her finger.

In many other cases ankle-swelling has been the earliest sign of fluid overloading; where previous mastectomy had led to oedema of one arm, patients frequently noted an increased swelling in this arm as an additional and early sign of fluorohydrocortisone overdosage.

When symptoms of salt deficiency occurred this patient could usually dispel them rapidly either by sublingual deoxycortone or by 9α-fluorohydrocortisone, 0.125 mg., once or twice daily.

This gallant lady died of metastatic disease two and a half years after total adrenalectomy.

Case 2: Addison's Disease

On December 12, 1952, a married woman aged 35, with a three-months history of this disease, was admitted to hospital under my care in Addisonian pre-crisis, deeply pigmented, hypotensive (blood pressure 75/50), and vomiting. She was subsequently maintained on deoxycortone trimethyl acetate injections fortnightly for some six months, but on transferring to 37.5 mg. of cortisone acetate daily by mouth she improved greatly, had much more energy, withstood cross-infections better, increased in weight, and began to lose her abnormal pigmentation. On this dose she remained well, taking an occasional extra 12.5 mg. in the face of major stress; for instance, very hot summer days would necessitate an increase to 50 mg. cortisone daily over the period of the heat-wave. She remained perfectly well and was doing full household duties in spite of constantly lowered serum sodium and chloride figures until January, 1956, when she felt dizzy and nauseated and started to vomit. She came to hospital by ambulance. There were no signs of an acute infection; blood pressure was 120/80, her usual figure. She had taken extra cortisone tablets with no effect. On 75 mg. of cortisone daily and 0.125 mg. of 9α-fluorohydrocortisone and two 1-mg. deoxycortone linguettes she improved, returning after two months to her usual cortisone dosage, stopping all other preparations. After a further two months, however, the symptoms returned and she was restarted on small additional amounts of fluorohydrocortisone. She remains well on 50 mg. of cortisone acetate daily with an additional 0.125 mg. of fluorohydrocortisone by mouth every third day, and with a very occasional additional dose of fluorohydrocortisone if symptoms recur.

Comment.—This patient improved dramatically on being changed from deoxycortone to cortisone therapy in 1953, and remained perfectly fit and well, leading a normal life, for 2½ years on cortisone alone in spite of constantly low serum sodium levels throughout this period. After this time small amounts of 9α-fluorohydrocortisone have become necessary to prevent symptoms of salt deficiency. It is of interest that at all times throughout this study she could be rapidly changed from negative to positive sodium balance by small amounts of fluorohydrocortisone or by 1–2 mg. of deoxycortone given sublingually, but it took 30 months for symptoms of salt deficiency to appear when treated on cortisone alone.

Case 3: Cushing's Syndrome

A married woman aged 30 had a two-stage bilateral total adrenalectomy performed by Sir Stanford Cade on March 29 and April 5, 1956. Her blood pressure before operation was 140/100. A pre-operative course of glycyrrhetinic acid had no effect on the elevated 17-ketosteroid, but appeared to produce a slight reduction in the hydroxysteroid urinary excretion. At operation both glands showed simple hyperplasia, the left more than the right. The operations were carried out uneventfully, but it became rapidly evident that her post-operative cortisone requirements were in excess of the usual; a reduction to 75 mg. or less daily was quickly followed by tachycardia and marked general malaise and feelings of exhaustion. She had the dry skin and scaly rash often seen after adrenalectomy in this condition. She was finally discharged to convalescence on May 8 on 25 mg. of cortisone three times a day. Five days later nausea, vomiting, and diarrhoea began. These symptoms were accompanied by a marked tachycardia, for which digitalis was given under the mistaken impression that the patient had paroxysmal tachycardia. Vomiting worsened and she was readmitted on May 17. It was clear that she was suffering from adrenal insufficiency in spite of receiving 75 mg. of cortisone daily by mouth; no significant abnormalities were seen in her electrocardiogram. The blood pressure was 80/50 and the skin dry and scaly. Blood chemistry: serum sodium, 132 mEq/l.; potassium, 4.3 mEq/l.; chlorides, 87 mEq/l.; serum urea, 23 mg. per 100 ml. No signs of wound infection were found and the condition responded to increased dosage of cortisone and occasional 1-mg. doses of 9α-fluorohydrocortisone by mouth. Since then she has remained well and has been doing full household duties on 50 mg. of cortisone acetate daily by mouth.

Comment.—Some points of interest have been brought out in a study of this case. The dry, scaly skin seen soon after total adrenalectomy is the reverse of the moist "oily" one characteristic of Cushing's syndrome; the rapid swing from one extreme to the other is occasionally striking. A second feature of interest was the marked tachycardia. This, a sign of cortisone deficiency, was interpreted by an outside practitioner as a bout of paroxysmal tachycardia; the digitalis given probably aggravated the pre-existing nausea, anorexia, and vomiting. A third point of interest is that although clearly in Addisonian pre-crisis on her second admission her blood urea remained at a normal level.

Summary

In the maintenance of the adrenocortical-deficient subject in health cortisone (or hydrocortisone) is now the most important single therapeutic substance. Doses of 37.5 to 50 mg. daily are necessary for full substitution therapy; deeply pigmented patients with persistent symptoms of weakness and lassitude on smaller amounts reflect inadequate dosage.

Of the salt-retaining substances, 9α-fluorohydrocortisone is perhaps at the moment the most useful form of therapy, as, given orally in small amounts, it is more effective than deoxycortone; several other more powerful substances have recently been reported. In crisis intravenous hydrocortisone or fluorohydrocortisone is the method of choice, but the use of fluorohydrocortisone and cortisone orally in adequate dosage at the first sign of adrenocortical deficiency has greatly reduced the incidence of such crises.

My thanks are due to Sir Stanford Cade for permission to publish details of his cases, and for his help and enthusiastic co-operation in this work; also to Dr. R. I. S. Bayliss for his helpful comments and criticism. Much of the fluorohydro-

cortisone was donated by the Medical Research Council. Since this article was written we have learnt that Messrs. Squibb have made 9α-fluorohydrocortisone available to hospitals in tablets of 1-mg. and 0.1-mg. strength.

REFERENCES

Bartter, F. C. (1956). *Metabolism*, **5**, 369.
Borst, J. G. G., Ten Holt, S. R., de Vries, L. A., and Molhuysen, J. A. (1953). *Lancet*, **1**, 657.
Byrnes, W. W., Barnes, L. E., Bowman, B. J., Dulin, W. E., Morley, E. H., and Stafford, R. O. (1956). *Proc. Soc. exp. Biol. (N.Y.)*, **91**, 67.
Cade, Sir S. (1954). *Ann. roy. Col. Surg. Engl.*, **15**, 71.
—— (1955). *British Surgical Progress*, edited by E. R. Carling and J. P. Ross, p. 54. Butterworth.
Calvert, R. J. (1954). *Lancet*, **1**, 805.
Card, W. I., Mitchell, W., Strong, J. A., Taylor, N. R. W., Tompsett, S. L., and Wilson, J. M. G. (1953). Ibid., **1**, 663.
Fried, J., and Sabo, E. F. (1954). *J. Amer. chem. Soc.*, **76**, 1455.
Galat, E. E. (1955). *Brit. J. Pharmacol.*, **10**, 305.
Garrod, O., Nabarro, J. D. N., Pawan, G. L. S., and Walker, G. (1955). *Lancet*, **2**, 367.
Groen, J., Peiser, H., Frenkel, M., Kamminga, C. E., and Willebrands, A. F. (1952). *J. clin. Invest.*, **31**, 87.
—— —— Willebrands, A. F., and Kamminga, C. E. (1951). *New Engl. J. Med.*, **244**, 471.
Hart, F. D. (1956). *Ann. roy. Coll. Surg. Engl.*, **18**, 314.
Hollander, V. P., West, C. D., Whitmore, W. F., jun., Randall, H. T., and Pearson, O. H. (1952). *Cancer*, **5**, 1019.
Hudson, P. B., Mittelman, A., and Podberezec, M. (1954). *New Engl. J. Med.*, **251**, 641.
Liddle, G. W., Richard, J. E., and Tomkins, G. M. (1956). *Metabolism*, **5**, 384.
Louis, L. H., and Conn, J. W. (1956). *J. Lab. clin. Med.*, **47**, 20.
Luetscher, J. A., jun., and Curtis, R. H. (1955). *Fed. Proc.*, **14**, 746.
Lundy, J. S. (1955). *Proc. Mayo Clin.*, **30**, 446.
Maclean, J. P., Li, M. C., Lipsett, M. B., Ray, B., and Pearson, O. H. (1955). *J. clin. Invest.*, **34**, 951.
Mitchell, W. (1956). *Mfg Chem.*, **27**, 168.
Molhuysen, J. A., Gerbrandy, J., de Vries, L. A., de Jong, J. C., Lenstra, J. B., Turner, K. P., and Borst, J. G. G. (1950). *Lancet*, **2**, 381.
Pearson, O. H., Mendelsohn, M. L., and West, C. D. (1953). *J. clin. Endocr.*, **13**, 841.
Sahagian-Edwards, A., and Holland, J. F. (1954). *Cancer*, **7**, 1242.
Simpson, S. A., and Tait, J. F. (1952). *Endocrinology*, **50**, 150.
Thorn, G. W., Renold, A. E., Morse, W. I., Goldfien, A., and Reddy, W. J. (1955). *Ann. intern. Med.*, **43**, 979.
Van T'Hoff, W. (1956). *Quart. J. Med.*, **25**, 571.
Wynn, V. (1956). *Metabolism*, **5**, 490.

USE OF MECAMYLAMINE IN THE MANAGEMENT OF HYPERTENSION

BY

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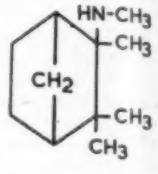
The discovery by Stone *et al.* (1956) that mecamylamine ("inversine"), a secondary amine, has pharmacological properties in many ways similar to those of the quaternary ammonium compounds, which are tertiary amines, is of interest not only in relationship to the properties of the substance itself but also because other secondary amines as yet untested may prove to be more satisfactory as ganglion-blocking drugs than any of those now available.

On the basis of both animal (Ford *et al.*, 1955; Stone *et al.*, 1956) and clinical studies (Ford *et al.*, 1955; Freis, 1955; Freis and Wilson, 1955, 1956; Moyer *et al.*, 1955) it is evident that mecamylamine causes blockade of both sympathetic and parasympathetic ganglia. It differs from the methonium compounds, however, in being readily and completely, or almost completely, absorbed from the alimentary canal. It has also been reported (Freis and Wilson, 1955, 1956) that, contrary to the invariable course of events with the methonium compounds, the continued administration of mecamylamine leads to little or no drug toleration, a point of great practical and theoretical interest. The structural formula of mecamylamine (3-methylamine*iso*camphane hydrochloride) is here shown.

The present study describes our experiences with the use of mecamylamine in the management of 40 cases of hypertension treated for from four to eight months.



Method

Mecamylamine was administered by subcutaneous or intravenous injection and by mouth. The blood pressure was measured by the method recommended by the Committee for the Standardization of Blood Pressure Readings (1939) in order to maintain uniformity with observations published previously on hexamethonium, pentolinium ("ansolysen"), and chlorisondamine ("ecolid") (Restall and Smirk, 1950; Smirk and Alstad, 1951; Smirk, 1953; Smirk and Hamilton, 1956).

Over a period of from four to eight months (average 4.6) 40 patients (20 males, 20 females) have received a trial of mecamylamine. Fundal gradings were or had been grade IV (Keith, Wagener, and Barker, 1939) in five cases, grade III in nine, and grades II or I in the remainder, most of whom had other severe manifestations such as congestive cardiac failure. Twenty-five patients had had treatment with other ganglion-blocking agents previously. In the remainder treatment was instituted with mecamylamine.

Drug Toleration

Before comparing the potencies of mecamylamine and other ganglion-blocking drugs it is necessary to consider whether mecamylamine causes drug toleration. At an early stage it became evident that toleration either did not occur or was present to a comparatively minor degree following the repeated administration of mecamylamine. Indeed, if drug toleration does develop it must do so early in the course of administration of gradually increasing doses; for once a fully effective dose has been discovered there is no consistent change in the dose needed to reproduce the same fall of blood pressure. In some instances the requisite dose has increased somewhat after several weeks or months of treatment; in other instances, somewhat less frequently, the requisite dose has decreased. In Fig. 1 is shown the

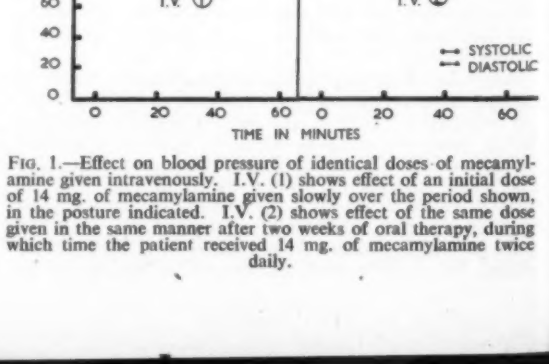


FIG. 1.—Effect on blood pressure of identical doses of mecamylamine given intravenously. I.V. (1) shows effect of an initial dose of 14 mg. of mecamylamine given slowly over the period shown, in the posture indicated. I.V. (2) shows effect of the same dose given in the same manner after two weeks of oral therapy, during which time the patient received 14 mg. of mecamylamine twice daily.

result of a test in which the initial effective dose was determined by intravenous titration. This was repeated after two weeks of oral therapy, with the production of an identical response.

Comparison of the Effective Doses of Mecamylamine, Pentolinium, Chlorisondamine, and Hexamethonium

The effective dose of mecamylamine may be compared either with the initial doses of quaternary ammonium compounds or with the doses of such compounds which may be required after repeated administration. In a series of 40 patients treated with mecamylamine the least dose to produce any significant effect was 3 mg., and 5 mg. is a suitable initial oral dose. The effective single oral dose reducing the blood pressure in the standing posture to about 120 or 130 mm. systolic, with corresponding reduction in the diastolic pressure, was 10 mg. or more in 80% of cases.

The duration of action of mecamylamine is in excess of 12 hours. Consequently, when two or more daily doses are given the effect obtained from one dose is influenced by the residue of the effect from the preceding dose. Hence increase of the night dose will have some effect on the level of the blood pressure next morning, and will influence the size of the dose which should be administered then. A fairly good control over blood-pressure levels can be obtained usually by two doses a day, the night dose being, for preference, approximately 30% higher than the morning dose. We have found it an advantage to give a small supplementary dose about 2 p.m., as otherwise there is often a rise of pressure in the late afternoon or early evening. Doses are adjusted in terms of the hypotensive action. The average daily dose in those of our patients who continued on mecamylamine was 33 mg. This average is probably higher than the average daily dose in unselected cases, as about half of our patients on mecamylamine had been selected because of the large dose of pentolinium or chlorisondamine which had been needed to reduce the blood pressure adequately. Among all cases maintained on treatment the highest dose was 70 mg.

By comparison, the effective oral dose of pentolinium per 24 hours at the time of initiation of treatment may vary from 40 to 160 mg., whereas when full drug toleration has been acquired, 60 to 1,800 mg. a day may be necessary, although most patients are controlled with doses of between 160 and 360 mg. a day. Correspondingly effective doses of chlorisondamine are of the order of 25 to 75 mg. at initiation of therapy and 50 to 750 mg. in the fully tolerant patient, and of hexamethonium salts 100 to 300 mg. initially and 300 to well in excess of 3,000 mg. when full tolerance has been acquired.

Direct comparison of mecamylamine with pentolinium was possible in 21 patients. In all of these pentolinium had been administered long enough for full tolerance to develop. Most of these cases had required unusually high doses of pentolinium. In 10 of these pentolinium had been given parenterally, in 11 orally. The results are shown in Table I.

The group originally receiving parenteral pentolinium was made up of patients having in general a particularly high requirement of quaternary ammonium compound. This is reflected in the larger requirement of mecamylamine in this group than of the group previously on oral pentolinium, and of the whole series (33 mg.).

It is of interest to note that oral mecamylamine and parenteral pentolinium, when full tolerance had developed to the latter, were equally potent.

TABLE I

No. of Patients	Average Effective Daily Dose Pentolinium (mg.)	Average Effective Daily Dose Mecamylamine (mg.)
11	460 (oral)	32 (oral)
10	39 (parenteral)	39 ,,

When hypertensive patients receive two or three doses daily there is usually less variation of the blood pressure throughout the day after mecamylamine than after chlorisondamine or pentolinium. Indeed, in some patients the degree of control which can be obtained by mecamylamine alone is approximately equal to that which can be obtained by chlorisondamine or pentolinium in combination with reserpine. Unfortunately, in some patients the development of side-effects makes it impracticable to administer a sufficient dose of mecamylamine. Our impression of the relationship between control over the blood-pressure level by mecamylamine as contrasted with pentolinium and chlorisondamine is that the best control over blood-pressure levels can be obtained with mecamylamine in those patients who are fortunate enough to be able to tolerate it. Unfortunately, mecamylamine in fully adequate doses is more often associated with prohibitive parasympathetic side-effects than either pentolinium or chlorisondamine. The responses to these drugs are highly individual, some patients for an equivalent degree of control over the blood pressure being more comfortable on mecamylamine, and some on pentolinium, and some on chlorisondamine.

Other Findings

Relationship Between the Effective Subcutaneous and Oral Doses of Mecamylamine.—It has been reported by Freis (1955), Freis and Wilson (1955, 1956), Moyer *et al.* (1955), and Ford *et al.* (1955), that mecamylamine has approximately the same hypotensive action whether administered subcutaneously or orally. Certainly the difference between the subcutaneous and oral doses is very much less than with the various quaternary ammonium compounds. We have found that on the average the oral dose must be a little greater than the parenteral dose in order to produce an equal fall of blood pressure, although in a number of patients the same dose was equally hypotensive when given orally as when given parenterally (Table II, Fig. 2).

Postural Hypotension After Administration of Mecamylamine.—The occurrence of postural hypotension following the administration of ganglion-blocking drugs has been referred to on many occasions. The action of mecamylamine appears to be indistinguishable in this respect from that of quaternary ammonium compounds. The relationship between the extent of the fall in blood pressure in the horizontal posture and the additional fall in the blood pressure which occurs on standing varies from patient to patient.

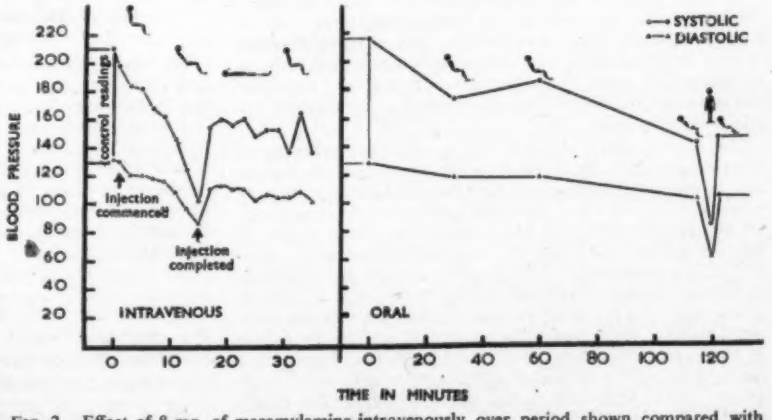


FIG. 2.—Effect of 8 mg. of mecamylamine intravenously over period shown compared with that of a single oral dose of 8 mg. given to same patient on a subsequent occasion. Effect of posture as shown.

TABLE II

Case No.	Parenteral Dose (mg.)	Route	B.P. Before	Lowest B.P. After	Oral Dose (mg.)	B.P. Before	B.P. After
7	9	H.I.	216/122	120/62	12	198/116	118/64
8	12	H.I.	242/126	176/90	20	214/104	162/78
26	10	H.I.	198/120	124/68	16	190/112	166/100
29	20	I.V.	230/136	154/94	20	200/122	166/100
30	6	H.I.	176/100*	118/76	6	186/100	128/80
35	10	H.I.	150/100*	140/96	12	170/100	142/96
38	15·5	I.V.	216/108	138/84	15	182/100	138/78
R.M.†	14	I.V.	212/108	124/92	14	208/104	166/104
E.D.†	8	I.V.	204/132	102/86	8	216/128	114/82
H.F.†	7	H.I.	238/124	180/108	7	258/130	156/94

* These cases had received doses of mecamylamine on the previous day and some residual drug action is present.
† Additional to series.

Some patients have a substantial fall of blood pressure in all postures with comparatively little postural hypotension. Others have a very little fall of pressure when lying flat but a considerable decrease in the blood pressure on assumption of the erect posture (Table III).

TABLE III.—*Relationship Between Lying and Standing Blood Pressures and Pulse Rate Before and at the Trough of Blood-pressure Fall After Mecamylamine*

Case No.	Before Mecamylamine*			After Mecamylamine		
	B.P. Lying	B.P. Standing	Pulse	B.P. Lying	B.P. Standing	Pulse
2	238/122	210/118	82	194/108	186/88	80
3	204/106	162/118	76	146/96	142/90	76
4	208/120	194/110	84	154/102	126/90	80
6	254/142	240/160	100	182/134	144/96	98
8	246/112	208/100	84	142/68	140/72	84
9	196/116	214/136	60†	154/116	118/90	64†
10	240/112	208/114	96	170/98	118/70	92
11	222/112	210/114		172/98	140/88	
14	238/116	222/120	102	178/92	168/96	92
20	174/120	178/100	80	142/90	116/80	84
21	216/130	150/108		168/114	124/102	
23	238/140	194/108	56	116/70	92/40	60
24	272/110	232/118	100	210/118	118/72	88
25	190/100	196/104	76	170/98	140/82	72
26	202/124	198/120	72	132/72	124/68	72
27	176/120	168/116	90	162/104	132/98	90
28	220/120	200/118	62	170/110	148/104	76
31	232/108	208/106	70	166/92	156/80	72
32	180/112	168/114	80	174/110	142/96	80
33	188/126	174/120	72	134/80	130/80	72
34	204/100	186/102	62	150/70	130/70	68
35	188/134	198/142	80	180/94	162/74	88
36	208/122	174/100	72	162/82	120/48	68

* All cases had received doses of mecamylamine on the previous day and in some cases residual drug action is present.
† Patients with auricular fibrillation having digitalis.

Effect of Mecamylamine on Pulse Rate.—There is no consistent change in the pulse rate following the administration of mecamylamine, except where congestive heart failure or impaired circulatory activity has been improved by its administration. The pulse rate may rise or fall slightly.

Effect of Meals on Hypotensive Action of Mecamylamine.—Just as with hexamethonium, pentamethonium, "M. & B 1863," "Ciba 9295," pentolinium, and chlorisondamine, so also mecamylamine administration is associated with an additional fall in the blood pressure after a meal. Probably this is due to inability of vascular reflexes to compensate for splanchnic dilatation.

Side-effects After Administration of Mecamylamine.—Most of the side-effects which may follow the administration of mecamylamine are of the same kind as those already encountered following the administration of chlorisondamine, pentolinium, and hexamethonium. In addition to the side-effects exhibited by hexamethonium and pentolinium, the administration of chlorisondamine and mecamylamine may lead to vague and indefinable feelings of malaise which make the patients unwilling to continue with the drug, often without their being able to explain exactly the nature of their symptomatology. Such complaints have been rather more prominent with mecamylamine than with chlorisondamine. In an individual patient parasympathetic side-effects such as blurring of the vision, dry mouth, and constipation may be either greater or less with mecamylamine than with chlorisondamine or pentolinium. We have found that urinary retention has occurred more often after mecamylamine and that nausea and vomiting have been more frequent after mecamylamine and chlorisondamine than after pentolinium. On the other hand, patients who have had attacks of ileus or abdominal distension or other intolerable alimentary side-effects on large doses of pentolinium, necessitating in some cases their transfer to subcutaneous injections, have usually been more comfortable on mecamylamine. In this series of 40 patients, half of whom had been selected for trial because of difficulty with side-effects or with control of blood pressure, the side-effects encountered were of such severity as to cause substantial discomfort in 25 (Table IV).

TABLE IV.—*Side-effects of Mecamylamine*

Alimentary	Dryness of mouth	11
	Nausea and vomiting	9
	Constipation and abdominal distension	14 (partial ileus in one)
	Diarrhoea	2
Urinary	Dysuria	5 (retention of urine in one)
Visual	Blurring of vision	5

Clinical Appraisal

It must be borne in mind that our experience with mecamylamine has been derived from a group of patients more than half of whom had previously proved difficult to manage with other ganglion-blocking agents and who probably constitute a particularly severe test for any therapeutic regime.

Of the total of 40 patients in whom the trial was undertaken, mecamylamine continues to be used as the ganglion-blocking agent of choice, with or without a rauwolfia alkaloid, in 22. Of the remainder, two died, and in three further cases supply difficulties curtailed the trial. It is of some interest to consider the 13 in whom mecamylamine was abandoned. In one case control of hypertensive cardiac failure was less satisfactory than with the original regime using parenteral pentolinium. In the remaining 12, severity of parasympathetic side-effects was the determining factor. Eight patients reverted to other ganglion-blocking agents (three parenteral pentolinium, three oral pentolinium, one oral chlorisondamine, one oral "139.C.55"*), one was satisfactorily managed on reserpine alone, and three defected from treatment, an unusual event for this clinic.

Since tolerance occurs to a limited extent only, if at all, and since the parenteral and oral doses so nearly correspond, the method of intravenous titration can be used very profitably to initiate treatment. Our experience has been that intravenous administration at the rate of 0.5 mg. a minute with continuous blood-pressure recording is safe and not too time-consuming.

Use of Mecamylamine in Conjunction with Rauwolfia Alkaloids

We have used mecamylamine in conjunction with reserpine (0.5 mg. or less in 24 hours), rescinnamine (0.75 mg. or less in 24 hours), or canescine (1 mg. or less in 24 hours). We have encountered no difficulties in using these combinations of drugs. Smaller doses of mecamylamine suffice when rauwolfia alkaloids are administered concurrently. The extent of the potentiation of ganglion-blocking activity requires further study, but the initial impression is that it is of the same order as that observed after pentolinium.

Summary

Mecamylamine, a secondary amine, exhibits in man the pharmacological properties characteristic of a ganglion-blocking drug. In contrast with quaternary ammonium compounds, mecamylamine is well absorbed

*N′-(5-cyano-5 : 5-diphenylpentyl)-*N′* : *N′* : N³-trimethylethylene-l-ammonium-2-morpholinium sulphate (Burroughs Wellcome and Co.).

from the alimentary canal, so that the oral dose is little more than the parenteral dose. The degree of drug toleration is slight, and is not sufficient to cause difficulty in determining the requisite dose of the drug. The action is more prolonged than that of pentolinium or of chlorisondamine, so that the degree of control over the blood-pressure level is better, provided that a sufficient dose can be administered. Adequate control over the blood-pressure level is hindered in some instances by the occurrence of parasympathetic side-effects, which appear to be rather more prominent in most cases than those we have encountered with pentolinium. There are, however, individual differences in patients such that, with equal falls of blood pressure, side-effects may be less in some patients when they are treated with mecamylamine and less in others when they are treated with pentolinium.

Mecamylamine may be used satisfactorily in combination with rauwolfia alkaloids. Delayed toxicity has not been encountered with mecamylamine during our experience of eight months.

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REFERENCES

Ford, R., Dennis, E., and Moyer, J. H. (1955). *J. Lab. clin. Med.*, **46**, 815.
Freis, E. D. (1955). *Lancet*, **2**, 977.
—— and Wilson, I. M. (1955). *Circulation*, **12**, 707.
—— —— (1956). *A.M.A. Arch. intern. Med.*, **97**, 551.
Keith, N. M., Wagener, H. P., and Barker, N. W. (1939). *Amer. J. med. Sci.*, **197**, 332.
Moyer, J. H., Kinard, S. A., Conner, P. K., Caplovitz, C., Ford, R., Herschberger, R. L., and Dennis, E. W. (1955). *Med. Rec. (Houston)*, **49**, 390.
Restall, P. A., and Smirk, F. H. (1950). *N.Z. med. J.*, **49**, 206.
Smirk, F. H. (1953). *Lancet*, **1**, 457.
—— and Alstad, K. S. (1951). *British Medical Journal*, **1**, 1217.
—— and Hamilton, M. (1956). Ibid., **1**, 319.
Stone, C. A., Torchiana, M. L., O'Neill, G. Q., and Beyer, K. H. (1956). *J. Pharmacol.*, **116**, 54.

Q FEVER DOWN THE DRAIN

BY

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There is nothing very original about Q fever contracted in the laboratory. Since the early days of research on this disease in Australia and the United States infections have regularly occurred in institutes where live organisms (*Rickettsia burneti*) have been handled, although the incidence has probably diminished since vaccination was introduced in 1948 (Smadel *et al.*, 1948). In most published accounts the mode of infection is apparently airborne, sometimes after transport on clothing (Oliphant *et al.*, 1949; Beeman, 1950), and often after very short exposure.

The main purpose of this paper is to describe two infections in the Department of Pathology, Cambridge, by a route which this highly versatile organism has not previously succeeded in exploiting. Since the investigation of Q fever has now ceased in the department, the opportunity is also taken to review briefly other infections which occurred among members of the staff while the work was in progress.

General Arrangements and Vaccination Procedure

Research on Q fever was carried out in a set of three rooms on the top (third) floor of the department, in an animal-room and post-mortem room on the same floor, and in five small huts on the roof.

Serological investigation of Q fever began in 1947, but living strains of *R. burneti* were not handled until October, 1949. From this date until March, 1955, the rickettsia was grown in large numbers for production of antigen and other purposes. All those who worked in the Q fever laboratory itself were given a course of two or three injections with vaccine kindly supplied by Dr. H. R. Cox, of the Lederle Laboratories. From December, 1953, vaccination was extended more widely to those who were known to visit the laboratory, and, in all, 31 of a total of 83 members of the staff of the department were vaccinated.

Vaccination was not more extensive, because of limitation of supply and also because a chronic sterile abscess sometimes formed at the site of inoculation. In two individuals this progressed to form a discharging sinus which took many months to heal. This complication is thought to occur more frequently after booster injections (Meiklejohn and Lennette, 1950), so these were not generally given.

No cases of Q fever were identified between 1949 and 1953. Between October, 1953, and July, 1954, however, five members of the staff developed typical attacks of Q fever, which were confirmed serologically. Investigation failed to reveal outside sources, and it was assumed that infection took place within the department.

Several outbreaks of Q fever in other laboratories have followed the first growth of *R. burneti* in the yolk sacs of chick embryos, which yield very highly infective material. The number of eggs harvested and the method of processing in Cambridge had not varied much since 1949, however, and the onset of laboratory infections in late 1953 seemed to coincide more with an increase in the number of workers who were handling the organisms, even though, with one exception, they did not themselves succumb.

Of the five individuals who developed Q fever, four (patients B, C, D, and E) worked elsewhere in the building and were unvaccinated. They had all been in their occupations for a number of years. The remaining patient (A) had recently arrived to work on Q fever and was consequently vaccinated. Two patients (D and E) were infected together from a blocked drain. The remainder were unconnected sporadic infections.

Sporadic Laboratory Infections (Not Associated with the Blocked Drain)

Patient A received 1-ml. injections of vaccine on January 4 and 11, 1954. On January 21 he harvested yolk sacs heavily infected with *R. burneti*. On February 11, 21 days after this exposure, he developed Q fever. Complement-fixing antibody was absent on the third day, but appeared on the fourth day—very much earlier in the course of the disease than is usual—and was presumably due to the previous vaccination. The attack was nevertheless moderately severe, until after chlortetracycline was given on February 15.

It is clear that insufficient time had elapsed between completion of the course of vaccination and exposure to large numbers of rickettsiae.

Patient B worked in the histology department on the first floor. Eighteen days before the onset of his illness, on February 21, 1954, he briefly entered the Q fever laboratory to deliver a message. He had no other contact that could be discovered, and it seems highly probable that he was infected during the few seconds that he was in the laboratory.

Patient C, who became ill on October 4, 1953, also worked in the histology department on the first floor. Although he lived in the country no obvious source of *R. burneti* to which he was exposed could be discovered outside the department. He paid occasional visits to the Q fever laboratory, but could remember none during the probable period of exposure. He had contact, however, with one of the assistants in the Q fever laboratory who often took tissues (not infected with *R. burneti*) for sectioning, and it is possible that the rickettsia may have been carried in the clothes or hair (see Beeman, 1950).

Laboratory Infections from the Blocked Drain

Patients D and E both developed Q fever on July 2, 1954. Since they did not meet outside working hours and had no obvious contact with external sources of *R. burneti*, it seemed likely that they were both infected in the department and at the same time. D had been in charge of the media and autoclave rooms for many years. E worked in the histology room, but he occasionally helped D with autoclaving when there was a lot to be done.

Material from the Q fever laboratory was sometimes taken to D's autoclaves, but until autoclaving was complete it was handled by Q fever laboratory staff and not by D himself. Moreover, E had not been assisting with the autoclaves during the period when infection probably occurred. D did go upstairs to the door of the Q fever laboratory, but not inside, on June 8 or 9 (23 or 24 days before the onset of his illness), but E claimed that he had not been near the Q fever laboratory at this time.

On June 11 at the probable date of infection, 21 days before the onset, a drain had been opened in the media room, flooding the floor. Both D and E were present, and subsequent inquiries strongly suggested that they were both infected at this time.

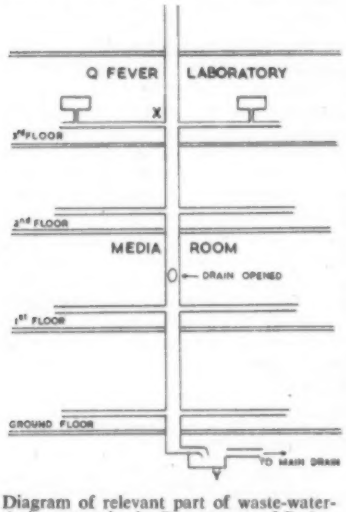

Diagram of relevant part of waste-water-drain system in the Department of Pathology. X=Junction which often became blocked. Y=Trap to main drainage.

The relevant part of the drainage system of the department is shown in the accompanying diagram. Waste water from sinks in the Q fever laboratory ran to a central drain-pipe which descended vertically to the ground floor and thence, through a trap (Y), into the main drainage system. This vertical drain-pipe ran inside the building through the rooms, including the media room on the first floor, collecting the waste water from lateral drains.

The lateral drain in the Q fever laboratory on the third floor was almost horizontal and the flow was very slow, so that it often became blocked at the junction (X) with the vertical drain and had to be opened at this point to be cleared.

The drain was blocked and cleared in this way on June 10, but on June 11 the obstruction recurred. This time it was lower in the vertical pipe and could not be cleared from the junction (X) in the Q fever laboratory. No clearing-points were present lower in the vertical drain for removing this obstruction, and the pipe was therefore cut open as it descended through the media room. This procedure, which had never been necessary before, released a flood of black sludge on to the floor of the room.

Twelve individuals were present or entered the media room shortly afterwards to see what was going on. Of these twelve, one had had Q fever previously (patient B) and three had received Q fever vaccine. Of the remaining eight susceptible individuals who were exposed, two developed Q fever (patients D and E). Serum was obtained later from four of the six susceptibles who remained well, but there was no antibody rise to suggest asymptomatic infection.

It seemed probable that patients D and E were infected by inhalation of droplets containing *R. burneti* from the deluge of sludge. Specimens of sludge were therefore collected from the junction of the horizontal and the vertical drain in the Q fever laboratory (X) and from the trap at the bottom of the pipe (Y). These specimens, which were taken in November, 1954, were centrifuged at 2,000 r.p.m. for 10 minutes, and the supernatants were mixed with penicillin and injected into guinea-pigs. *R. burneti* was isolated in this way from the sludge at the top of the drain, but not from the trap at the bottom.

Viable rickettsiae had not been deliberately poured down the sink in the Q fever laboratory. Infected glassware and other equipment, as well as discarded egg and animal tissues and infected fluids, were normally autoclaved, and some pieces of special apparatus were boiled. An exception was made for Tenbroeck tissue grinders and Waring blenders, however. The heavy coating of yolk which usually remained after processing of eggs made it extremely difficult to clean these pieces of apparatus after sterilization by heat. They were therefore soaked in lysol (approximately 5%) overnight, then were washed in the sink. In earlier investigations of the inactivation of *R. burneti* by disinfectants (Malloch and Stoker, 1952) lysol was easily the most effective of those tested at room temperature. 1% lysol reduced the infectivity of yolk-sac suspensions by a factor of more than a million in three hours, at room temperature.

Nevertheless the most likely source of the living rickettsiae in the drain was the lysol-treated material. This may have occurred through a mistake in the time of inactivation or the concentration of lysol, which was not accurately measured, or through failure of the disinfectant to penetrate large lumps of yolk tissue. Once in the drain the lysol would rapidly be diluted out, and surviving organisms might remain embedded in the sludge for many months.

Undiagnosed and Asymptomatic Infection of Department Staff

In view of these attacks of Q fever an attempt was made to find out if asymptomatic or undiagnosed infection had occurred more widely than was suspected while work on *R. burneti* was being carried out.

Of 83 members of the staff in October, 1954, 31 had been vaccinated. Excluding the 5 patients and 10 others who were not available, specimens of serum were obtained from 68 individuals and tested for Q fever antibody by the complement-fixation test.

Of 42 unvaccinated members of the staff, four had antibody (two at 1/5, one at 1/10, one at 1/20). This could have been due to unrecognized infection in the department, but the numbers were too small to show a significant increase over the proportion of the general adult population (blood-donors) with antibody. There is no suggestion that unrecognized infection was at all common in the department.

Twelve out of 26 of the vaccinated group had antibody at 1/5 or greater. Antibody was present in all the six vaccinated individuals who were heavily exposed to the rickettsia in the Q fever laboratory, but in only 6 out of 20 of those who were rarely exposed.

Summary and Conclusions

Two Q fever infections in the Department of Pathology, Cambridge, are described: these occurred by an unusual route. A review is also given of other infections which occurred among the staff.

Except for Patient A, the laboratory infections occurred amongst unvaccinated individuals who had a rare and unlucky experience of the rickettsia. It is curious, however, that no infections were ever detected among those of the staff who had close contact with the Q fever laboratory but were nevertheless unvaccinated.

In 1953, before vaccination was offered more widely, nine unvaccinated workers from an adjoining laboratory were sharing a refrigerator in the Q fever laboratory, which they repeatedly entered. None developed either clinical or serological evidence of infection. On the other hand, Patient B entered the laboratory for a few seconds and later succumbed to the disease.

This effect might be due to chance or individual variation in susceptibility. It is possible, however, that small repeated infections produce an immunity which is not detectable by conventional tests for antibody.

The resistance of *R. burneti* to adverse environmental conditions has allowed its transfer to new hosts by varied and often devious routes. The two infections, which resulted from contamination of the drain-pipe, suggest that the possibilities are not exhausted, but it is fortunate that the circumstances of this particular incident are unlikely to recur frequently.

I am grateful to Professor H. R. Dean for permission to publish this paper.

REFERENCES

Beeman, E. A. (1950). *Publ. Hlth Rep. (Wash.)*, **65**, 88.
Malloch, R. A., and Stoker, M. G. P. (1952). *J. Hyg. (Camb.)*, **50**, 502.
Meiklejohn, G., and Lennette, E. H. (1950). *Amer. J. Hyg.*, **52**, 54.
Oliphant, J. W., Gordon, D. A., Meis, A., and Parker, R. R. (1949). Ibid., **49**, 76.
Smadel, J. E., Snyder, M. J., and Robbins, F. C. (1948). Ibid., **47**, 71.

A SURVEY OF DIABETES IN WEST CORNWALL

BY

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The objects of this survey were (1) to determine the incidence of diabetes in the West Cornwall clinical area, which is an isolated geographical entity with a population of a quarter of a million, largely shut off from the rest of England by Bodmin Moor; and (2) to find out to what extent the diabetic patient constitutes a load on the community. In assessing the second object four main agencies were considered: the home, the district nurse, the general practitioner, and the hospital service.

Incidence

Approximately one-third of the population has been surveyed through general practitioners, the doctors taking part being chosen so as to obtain an even geographical distribution and a balance between town and country practices.

In the spring of 1953 preliminary invitations were sent to 55 general practitioners, and a subsequent letter invited each one who agreed to co-operate to survey his list and complete a short questionary (see Appendix). In this way figures were obtained covering the practices of 48 doctors distributed from near Land's End to Camelford and Bodmin. These varied in size from just over 500 to one partnership of nearly 13,000. The results are given in Table I. The rate per 1,000 is seen to be 5.6. The incidence varied within the practices surveyed from 3.2 to 8.4 per 1,000.

Of the 593 patients accepted as diabetics, the diagnosis had been confirmed in 579 by attendance at a diabetic or general medical clinic, by blood-sugar investigation, or by previous investigation as a hospital in-patient. The remainder were accepted after careful scrutiny, and, in some cases, after personal discussion with the doctor making the return. No significant difference was found in the predominantly rural and predominantly urban practices. A cross-check on these findings was made by counting the number attending general medical and diabetic clinics, and the number (1,141) was found to accord closely with the estimated figure obtained from the general-practitioner returns (1,167).

TABLE I.—*Incidence of Diabetes in West Cornwall*

Total population of West Cornwall	266,389
No. of list patients surveyed	104,827
Percentage of total population surveyed	39·92
Total number of diabetics found	593
Number of diabetics per 100,000 population	565·7
Estimated number of diabetics in West Cornwall	1,507
Percentage attending diabetic or general medical clinics	77·4
Estimated total number attending diabetic or general medical clinics	1,167
Actual number found attending	1,141

Very little information is available on the incidence of diabetes in this country. During the second world war the necessity to obtain a medical certificate for special rations afforded an opportunity of arriving at an approximate figure. In 1947 it was thought that nearly all diabetics were availing themselves of the extra allowances. The incidence calculated from medical certificates in this year was 231 per 100,000 for England and Wales. It is possible, however, that many of the milder diabetics in rural areas did not avail themselves of the special rations.

The advent of the National Health Service has made it possible to enlist the help of the general practitioner in investigations of this type. In a recently published survey of the work of eleven practices covering the years April, 1952, to March, 1954, it was found that the annual rate of patients having consultations for diabetes varied from 2 to 7 per 1,000 population within the practices investigated. The average annual rate for all the practices was 3.6.

A partial explanation of the high incidence of the disease in Cornwall is provided by a study of the population structure. In this area approximately 19% of the population is aged 60 or over, as compared with 15% for the rest of the country. As diabetes predominates in the older age groups a higher incidence would be expected. A more powerful reason is probably provided by the isolation of the area, with consequent inbreeding in the past. Isolation in West Cornwall has meant a great deal more than lack of intercourse with the rest of England. The small fishing village and rural township have kept themselves apart to a degree rarely seen in the rest of England. Local geography has fostered this isolationism, for many of the coastal villages even to-day have no more than one bus a day or even one a week.

Sex Distribution

The distribution between the sexes is given in Table II, and is compared with that derived from a count of special ration certificates for the whole of the country in 1947. It will be seen that the sex distribution in Cornwall closely follows that of England and Wales as a whole. The

TABLE II.—*Sex Distribution*

	Males		Females	
	No.	%	No.	%
General-practitioner survey	234	39·5	359	60·5
Old clinic cases	173	39·3	267	60·7
Present Truro Clinic	178	36·9	304	63·1
England, 1947 (special ration certificates)		38·0		62·0

slightly greater predominance of female patients at the clinics as compared with the general-practitioner survey may be explained by the fact that the principal clinic in the area is held at 10 a.m., so that men in jobs may have some difficulty in attending.

Age at Onset

In relation to the load on the community it is necessary to consider the age at which the disease first produces symptoms and the manner of its presentation.

The average age of onset as determined from the case records of 901 clinic patients was 52 years. The age of onset in relation to sex shows a striking difference between male and female diabetics (see Chart). The female curve rises

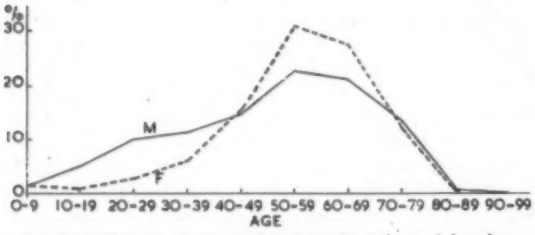

Chart showing age at onset of diabetes in males and females.

sharply to a peak in the sixth and seventh decades while the male curve is flatter. Of greater interest perhaps is the relative preponderance of males in the first four decades and the tendency for this preponderance to reappear in extreme old age. The effect of this on the incidence of the disease in the over-70 age groups is accentuated by the tendency in West Cornwall for the female diabetic to die at an earlier age than the male (see below). The striking excess of females in the sixth and seventh decades is well known and accounts for their overall preponderance in the survey (60.5% in a total of 693 cases).

Mode of Onset

The material used for this part of the investigation was the case records of 573 clinic patients, in nearly all of which the history had been taken with this investigation in mind. It will be seen from Table III that the classical symptoms of thirst, polyuria, and weight loss constituted the reason for seeking advice in only 41.4% of the cases. Incidental illness and routine examination together account for the first attendance of 13.5% of all the cases attending. Some of these were picked up by shrewd general practitioners looking after minor illness such as influenza at home. Most, however, were diagnosed on admission to hospital for illness in no way associated with diabetes. Routine medical examination for life assurance, for the Services, or for employment led to the diagnosis of 3.7%.

TABLE III.—*Mode of Onset in 573 Cases*

Classical (thirst, polyuria, weight loss)	237 (41·4%)
Incidental illness	56 (9·8%)
Eye complications	38 (6·6%)
Pruritus and eczema	53 (9·2%)
Skin sepsis (including foot sepsis)	46 (8·0%)
Weight loss alone	30 (5·2%)
Routine examination	21 (3·7%)
Lassitude alone	12 (2·0%)
Neuritis	9 (1·6%)
Coma or pre-coma	20 (3·5%)
Gangrene	20 (3·5%)
Other	31 (5·4%)

A consideration of these groups raises the question of whether there are not in the community to-day many diabetic patients more or less symptom-free and therefore undiagnosed. While it is true that many of this group on direct questioning admitted having symptoms of diabetes such as polyuria, they were not such as to bring them to medical attention. It seems likely, indeed, that routine urine testing of the whole community would lead to a further substantial addition to the figure of incidence in this area at least.

The figure for skin sepsis includes also cases presenting with foot sepsis. All but one of the cases of gangrene were of the lower limb. Several of the 20 cases presenting in coma or pre-coma appear to have had no symptoms suggestive of the disease till a few days before the onset of coma.

Use of Clinics

Information was obtained on this subject from the answers to the questionary. They show that 77.4% of all patients attend either a diabetic or a general medical clinic (Table IV). Some were attending more than one clinic at

TABLE IV.—*Attendance at Clinics*

Total number of diabetics found (G.P. survey)	593
Information *re* clinic attendance not given	26
Remainder	567
Attending clinics	445 (78·5%)
„ diabetic clinic	418 (73·7%)
„ general medical clinic	21 (3·7%)
„ other clinics	11 (2·0%)
Hospital in-patients	26 (4·6%)

the same time—for example, diabetic and chest. Some were regarded as still attending the clinics though in-patients at the time of the survey.

The extent to which the clinics were used varied widely, and this variation appeared to bear no relation to geographical accessibility. For example, in one large practice returning 63 patients all but three of these attended the diabetic clinic four miles away. In the same town the attendance rate from another doctor's practice was 18%. It was clear that a small proportion of the general practitioners regarded themselves as competent to look after their own diabetics and referred to the clinics only those presenting special problems.

It might be thought, particularly in a sparsely populated rural area, that age would exert a considerable influence on attendance, but this is apparently not so. The average age of those attending the clinics is 64, of those not attending 65. Of the 120 patients shown as not attending the clinics in the general-practitioner returns, 50 (41.7%) were males and 70 (58.3%) females. These figures show a slightly greater attendance rate for females than for males in proportion to their total numbers.

Problems of the Home

These are mainly those constituted by special diet, insulin administration, and intercurrent illness. Of these, the dietetic problem gives rise to least anxiety in the minds of diabetic patients. Of 501 patients investigated at the Truro Clinic, 100 (20%) were adhering to a strict dietetic regime (Lawrence line ration scheme); 363 (72.4%) were observing some dietetic restriction short of this; and 38 (7.6%) might be regarded as observing no dietetic restrictions.

It is probably true to say that the problem of diet constitutes a handicap to no more than 20% who adhere to a strict regime. The problem of insulin administration, however, is of a different order. Of the clinic patients, 18% are found to require no insulin, 37% use one type, and 45% two types (generally soluble and protamine zinc) daily, while 5% of all patients attending require more than one injection of insulin daily. Thus insulin administration constitutes a problem in 82% of all cases, and amongst this number the problem is of several grades from the point of view of domestic responsibility. The patient who requires one injection daily of one type of insulin is much less of a problem than the patient who has to manipulate two separate phials, while the patient who requires two daily injections may be much restricted in activity if she is not able to cope with the problem herself.

Table V shows the home arrangement for insulin administration in 383 patients attending the Truro Clinic. It shows that the problem confronting the female patient is solved through a wider variety of agencies than that of the male. The number of patients regularly giving their own injections is 80.4% of the males and 62.5% of the females. For those, however, who are unable to give their own injections the wife proves more valuable to the helpless

TABLE V.—*Insulin Administration in* 383 *Cases*

	Males		Females	
	No.	%	No.	%
Self	111	80·4	153	62·5
Wife	18	13·0		
Husband ..			26	10·6
Father	1	0·8	1	0·4
Mother			1	0·4
Daughter	3	2·2	27	11·0
Son	2	1·4	8	3·2
Neighbour ..	1	0·8	9	3·7
Nurse	2	1·4	20	8·2
Total ..	138		245	

Nurse gives 5·7% of all insulin injections. 69% of all patients give their own insulin.

husband (13%) than the husband to a dependent wife (10.6%). The helpless female patient in fact chooses from a wide range of assistance of which daughter, husband, and district nurse are the most important. The helpless husband tends to rely exclusively on his wife, and usually only when a widower does he resort to help from other agencies.

The figure of 5.7% of all injections given by the district nurse is probably too low. In country districts she plays an important part in the training of the patient or a relative in insulin administration. This applies particularly to the milder diabetic who is stabilized as an out-patient. This phase ended, she generally ceases to attend except for the small percentage who are dependent on her for daily insulin. There are some, however, who require a supervisory visit once a week or oftener, and on these occasions the nurse usually gives the insulin. In some cases where measurement of the correct dose constitutes the main problem she may fill the syringe and leave it for the patient herself to administer the next day. In some cases of defective eyesight a member of the household measures the dose and the patient gives the injection.

The commonest reasons given for inability to administer their own insulin were defective eyesight, nervousness, and general frailty of old age. Though defective eyesight was the commonest reason given it often seemed to be mainly an excuse to cover lack of courage. The relationship to age was very definite, as shown by Table VI. From this

TABLE VI.—*Age and Inability to Give Own Insulin*

Age Group:	0-9	10-	20-	30-	40-	50-	60-	70+	Total
Total on insulin	4	6	8	25	42	90	115	93	383
Dependent on others	3	1	0	2	4	18	33	52	113
% " "	75	16·6	0	8	9·5	20	29	56	29·5

it is seen that dependence on others for insulin administration increases numerically in each decade from the third and that more than half of those over 70 are dependent on others for this service.

Intercurrent Illness

How much illness does the diabetic patient have? In an attempt to answer this question 483 patients passing through the clinic at Truro were questioned at each quarterly attendance during 1954 regarding illness in the previous three months. The investigation has now been continued, and has been completed for the year 1955, during which 663 patients were questioned. The results are set out in Table VII. At the onset it became clear that in dealing with the older age groups it was extremely difficult or impossible to obtain a true measure of morbidity. Many of the patients are frail or infirm. Standards based on fitness for work or confinement to the house have little meaning in a group in which many are over working age or are housewives doing a limited job of work in their own homes. In the end it was decided to inquire about days spent in bed through illness. Two main reasons for this inquiry were (1) such illness constitutes a load on the home to a much greater extent that that which does not require rest in bed, and (2) it is a measurable entity which the patient can easily remember.

TABLE VII.—*Days in Bed* 1954 *and* 1955

	Males		Females	
	1954	1955	1954	1955
None ..	139 (77·7%)	216 (82·4%)	214 (70·4%)	317 (79%)
1–7 days ..	14 (7·8%)	15 (5·7%)	27 (8·9%)	24 (6%)
8–35 " ..	19 (10·6%)	25 (9·5%)	55 (18·1%)	50 (12·5%)
Over 35 days	7 (3·9%)	6 (2·3%)	8 (2·6%)	10 (2·5%)
Total ..	179	262	304	401

From this investigation the fact emerges that 73% of all patients had no illness requiring rest in bed in the year 1954 and that the proportion was rather higher for 1955, a year in which less respiratory illness and fewer fractures of the lower limb occurred. These figures might not be so good if they included diabetics not attending the clinics. This point is discussed below.

The figures also include time spent by clinic patients in hospital. Owing to the large number of hospitals involved it has not been possible to determine this figure accurately for clinic patients, but the hospital requirements of the total diabetic population of the area are discussed in a later section.

It will be seen that illnesses of one to five weeks predominated in the females in both years reviewed. This was due almost entirely to the greater tendency to fracture of the lower limb and abdominal operations in this group.

TABLE VIII.—*Principal Causes of Incapacity During* 1954 *and* 1955

	1954	1955
No. of patients questioned	483	663
Total No. of bed days, all patients	2,385	2,727
Average for all patients attending the clinic ..	4·9	4·1
" " " " laid up	18·2	21
Total No. of patients confined to bed	131	130
Respiratory infections; colds, influenza, bronchitis, sinusitis, pneumonia	666 days	632 days
Percentage of all bed days	27·9	23·2
No. of patients affected	42	43
Recognized diabetic complications: coma, precoma, hypoglycaemia, cataract extraction, skin sepsis, gangrene	370 days	377 days
Percentage of all bed days	15·5	13·8
No. of patients affected	26	28
Abdominal operations	307 days	276 days
Percentage of all bed days	12·9	10·1
No. of patients affected	12	10
Fractures and other injuries	249 days	82 days
Percentage of all bed days	10·4	3·0
No. of patients affected	7	4
Cardiovascular disease	171 days	262 days
Percentage of all bed days	7·2	9·6
No. of patients affected	5	9
Rheumatism, fibrositis, backache	55 days	58 days
Percentage of all bed days	2·3	2·1
No. of patients affected	6	5
Infectious fevers	149 days	118 days
Percentage of all bed days	6·3	4·3
No. of patients affected	7	6
Pulmonary tuberculosis	0	310 days
Percentage of all bed days	0	11·3
No. of patients affected	0	2

Table VIII gives the time spent in bed with the principal groups of illness. It amplifies Table VII and shows that the average number of days during which a clinic patient was laid up was 4.9 and 4.1 respectively for the years 1954 and 1955. There was a slight predominance of illness in the females: this was more definite in the year 1955, in which the average duration of bed illness was 3.6 days for males and 4.5 for females. In this respect the findings agree with those of the general-practitioner survey recently published by the General Register Office (1956).

An analysis of the illnesses shows that those which predominate in the lives of diabetics are not the recognized complications of diabetes but the sort of illnesses prevalent in the general community of corresponding age, with some diabetic complications added. These latter account for only about one-seventh of all bed days.

The predominance of respiratory ailments in a group which includes a large percentage over 60 is not surprising.

Respiratory ailments also account for much of the minor illness in this group of patients. All the fractures noted in this group are of the lower limb. The total disablement time to which they give rise may be very great in proportion to their number (only 7 in 483 cases in 1954). There were also a number of fractures of the upper limb which, though not necessitating rest in bed, gave rise to a considerable amount of disability.

It is probable that the figure for cardiovascular disease would be higher if this section included those patients who do not attend the clinics. There is some reason to believe that this is one of the common reasons for failure in attendance. The patient who, for example, develops congestive heart failure or who has had an attack of coronary thrombosis decides, very often with his general practitioner's agreement, that his cardiac condition no longer permits attendance at the clinic.

It may too easily be assumed from a consideration of Table IX that the recognized diabetic complications are a nearly negligible cause of morbidity in the lives of diabetic patients. Such is far from being the case. While troublesome, most complications of diabetes are compatible with a reasonable degree of activity and do not preclude attendance at the clinics.

TABLE IX.—*Complications in 738 Clinic Patients (Average Period of Observation 6.9 Years)*

	Cases
Diabetic Complications	
Cataract	74 (10%)
Retinopathy	45 (6·1%)
Skin sepsis	72 (9·8%)
Severe pruritus	41 (5·6%)
Dermatitis (generalized)	14 (2·0%)
Gangrene	33 (4·5%)
Symptomatic neuritis	36 (4·9%)
Diabetic coma	17 (2·3%)
Non-diabetic Complications	
Hypertension (systolic 180+ or diastolic 110+)	190 (25·7%)
Other forms of cardiovascular disease	72 (9·8%)
Congestive failure	28
Coronary insufficiency	9
Auricular fibrillation	8
Intermittent claudication	10
Cerebrovascular disease	17
Respiratory ailments	38 (5·1%)
Bronchitis, chronic	15
Asthma	9
Pulmonary tuberculosis	8
Pleurisy, ? tuberculous	4
Pulmonary fibrosis	2
Thyroid disease	21 (2·8%)
Thyrotoxicosis	9
Simple goitre	10
Myxoedema	2
Rheumatoid and osteoarthritis	15 (2·0%)
Neuroses and psychoses	7 (1·0%)
Carcinoma	8 (1·1%)
Gall-bladder disease	20 (2·7%)

Table IX sets out the frequency with which recognized diabetic complications have been observed in a group of 738 clinic patients observed over an average period of nearly seven years and places them in comparison with illness of other types. Eye diseases, which head the list, cause prolonged and often permanent disability, though in many of the 119 cases observed the degree of visual impairment is not great. Skin sepsis causes a large number of minor illnesses from which full recovery is the rule. By and large, it is only infections of the foot which are likely to lead to permanent disablement or to endanger life.

The small figure for pulmonary tuberculosis emphasizes the comparative infrequency of this disease in the controlled diabetic to-day. The incidence of gall-bladder disease is certainly much higher than the figure given under this heading suggests. It could be assessed accurately only by radiological examination of a large number of diabetic patients. No figure is given for the incidence of hypoglycaemic reactions. These are very common, and it is probable that in the course of seven years nearly every patient has experienced hypoglycaemic symptoms. In an educated diabetic community, however, these seldom amount to much except in the brittle unstable diabetic, who constitutes a problem in every diabetic clinic.

Work of the District Nurse for Diabetics

The main figures showing the work of the district nurse for diabetics are set out in Table X. The principal information that emerges from this investigation is that the district nurse is concerned with only a small proportion (15.1%) of these patients, yet these entail a large amount of work because so many are dependent on her for daily insulin. How many are so dependent? From a study of Table V, which was derived from an interrogation of clinic patients, it would appear that only 5.7% of all patients having insulin require the daily help of the district nurse. Here the figure is 6.4% of all diabetic patients (based on an estimate of 1,507 diabetics in the area). This would mean 8% of all patients having insulin. This apparent discrepancy may be explained partly by the fact that the first figure relates to clinic patients only, while Table X is concerned with all diabetics in the area. It would appear likely that the patient who has his diabetes managed exclusively at home is more dependent on the district nurse than the one who regularly attends the clinic. Secondly, Table V is based on patients' answers; the figures in Table X come from the district nursing service.

TABLE X.—*Work of the District Nurse for Diabetics*

Total No. of district nurses involved	98
No. of diabetic patients in the area (estimated)	1,507
" " " " visited in 1954	228
Percentage of all diabetics visited	15·1
Total No. of general nursing visits to all sick patients in the area in 1954	135,468
Total No. of visits paid to diabetics	25,068
Percentage of total visits paid to diabetics	18·5
No. of visits per diabetic patient visited	110
Average No. of visits per diabetic patient in the area	16·6
No. of diabetics requiring regular visits	125
Percentage of all diabetics in the area	8·3
No. dependent on district nurse for daily insulin	96
Percentage of all diabetics in the area	6·4

As already suggested, some of those whom the district nurse regards as dependent are not in fact given the daily injections by her. She may visit the patient on one day, give the injection, and leave a further dose ready for administration the next day by a member of the family or by the patient. The number of patients in whom insulin administration is a combined operation between nurse, patient, and family would appear to be considerable.

Load on the General Practitioner

The amount of work done for diabetics in the area by general practitioners is set out in Table XI. A large number of general practitioners failed to answer this section of the questionary as no records were kept of home visits or surgery attendances. Information was, however, obtained on the detailed care of 462 patients.

TABLE XI.—*Home Visits and Surgery Attendances in 1954*

Home Visits	
Total No. of diabetics	593
No information	131
Remainder	462
No. visits	236 (51·1%)
1–5 visits	124 (26·8%)
6–10 "	40 (8·7%)
Over 10 visits	62 (13·4%)
Total No. of visits paid to 462 patients	1,721
Average per diabetic patient	3·7
" " " " visited	7·6
Surgery Attendances	
No. of attendances by 462 diabetic patients	2,815
Average per diabetic patient	6·1

	No.	Visits	Average	Surgery Attendances	Average
Males	187	454	2·4	1,459	7·8
Females	275	1,267	4·6	1,356	4·9

There was wide variation in the amount of visiting and surgery attendance from patient to patient and from practice to practice. For example, one patient was returned as

paying 365 visits to the doctor's surgery in a year (presumably to have his daily insulin given). On the other hand, there was the doctor who found it necessary to pay only three visits to a total of 15 diabetics in a year. Surgery attendance seemed to be the general rule in some practices, in others the doctor seemed to prefer to see the patient at home. There was no significant difference between the urban and rural groups of practices in regard to the ratio of surgery attendance to home visiting.

It will be seen that about 50% of all diabetics require some attention in their own homes by the doctor during the year. This is in sharp contrast to the corresponding information on the work of the district nurse, whose visiting is concentrated on a much smaller section of the diabetic population (15%). It would appear, however, that, owing to the nurse's responsibility for daily insulin administration for a small number, the total visits paid and the average per diabetic patient in the area is much higher than that of the doctors.

The addition of surgery attendances, however, alters the picture considerably. *In toto*, the doctor sees the average diabetic patient approximately 10 times in the year. The district nurse visits the average diabetic patient 16.6 times. The doctor, however, is consulted by (or sees) 91% of his diabetic patients at some time during the year. The district nurse sees no more than 15.1% of them, and this last is predominantly a special group in which, by reason of age, visual failure, nervousness, or lack of competent family or neighbour help, insulin administration necessitates her services.

The figure of 91% of all diabetics who have consultations either at home or at the doctor's surgery compares with that of 67.6% given for the year ending March, 1954, in the general-practitioner survey of the General Register Office (1956). The high figure for Cornish diabetics is partly explained by the age and sex incidence. The highest consultation rate given in the general-practitioner survey is that for women over 65. A comparative study of the age structure of the Cornish diabetic population and that of the survey shows that 38% of the former but only 9% of the latter are in this age group.

The same consideration arises in comparing consultation rates. The average for all patients in the general-practitioner survey is 3.7 per annum; for all Cornish diabetics it is approximately 10. But for women over 65 it is 5.7 per annum in the general-practitioner survey, and in the year most closely approximating in time to that of our Cornish survey it is 6 per female patient over 65. We have no comparable Cornish figures for a normal general-practice population, but if the Registrar-General's general-practitioner figures are representative of the country as a whole it seems clear that Cornish diabetics require about twice as many consultations in a year as the normal population of similar age.

Another significant figure here is that of patients who required neither home visits nor surgery attendance in the year. There were 43 (9.3%) of these in a total of 462 about whom information was available. Twenty-eight of these are recorded as on an insulin regime and 15 as having no insulin. These figures are of some importance in view of attempts to calculate the incidence of diabetes from surgery attendances and home visits over a given period. Although it must be assumed that those using insulin would at some time or times in the year make contact with the doctor's surgery, there seems no good reason why those on diet alone should do so.

In association with the figure of 49% of patients requiring some domiciliary visiting during the year by the general practitioner should be considered the figure from Table VII of 70 to 82% of patients having no days in bed. From this it seems clear that a large number of the doctors' visits are made to patients who are not confined to bed. The patient, for example, with an attack of bronchitis or a sore foot will stay indoors and send for the doctor, but he will often weather the illness in his armchair by the fire. Further confirmation of this view is obtained by considering the figure of 3.7 domiciliary visits by the general practitioner in association with the figure of 4.9 bed days. It would seem probable, indeed, that the amount of genuine illness in the life of a diabetic patient might be indicated with fair accuracy by doubling the number of days spent in bed—that is, 10 days' illness per annum.

The last section of Table XI compares the attention given to male and female patients at home and at the doctor's surgery. It will be seen that while the male diabetic gets most of his attention at the doctor's surgery the female patient gets it mainly at home. This is no doubt related to the fact that men can more readily arrange to fit in surgery attendances on the way to and from work. It is, however, in contrast to experience at the clinics, where the tendency is for a better attendance of women than men in proportion to their overall numerical distribution.

Hospital Requirements

What are the hospital requirements of diabetic patients? Why do they go there and how long do they stay? The answers to these questions were sought by inviting each of the 22 hospitals in the area to supply information regarding diabetic admissions during the year 1954–5 and by taking a census of diabetics in hospitals in the area on a day in November, 1955. Table XII shows the result of the first of these investigations. About 42% of those seeking admission to hospital did so for reasons not directly associated with the diabetes. This is not surprising in view of the findings for illness in the home. The diabetic picture is, however, more prominent in Table XII than in that of home illness (Table VIII). This is largely accounted for by the large number who have to come in for initial stabilization. The comparatively low incidence of respiratory ailments contrasts sharply with the high figure for illness in the home. This is in keeping with the general trend of medical care to-day, for the general practitioner can usually cope with such ailments even in the diabetic patient unless severe complications arise.

TABLE XII.—*Reasons for Admissions—All Hospitals*

Diabetic Causes		*Non-Diabetic Causes*	
Stabilization	51	Congestive failure	6
Restabilization	10	Other heart disease	3
Cataract and other eye complications	17	Cerebrovascular disease	8
Skin sepsis	12	Gall-bladder ,,	6
Hypoglycaemia	12	Thyroidectomy	2
Diabetic coma	9	Cancer	6
Pre-coma	4	Fracture (3) other injuries (2)	7
	115	Respiratory infection	5
		Pulmonary tuberculosis	6
		Other infections	8
		Intestinal haemorrhage	4
		Prostatic enlargement	3
		Acute abdomen	2
		Social reasons	6
		Pregnancy	3
		Other	10
			85

Altogether 227 patients were admitted to hospital in the year surveyed. Full particulars regarding the reasons for admission are available for 200 of these. The total number of bed days for these 200 was 3,122, and the average duration of stay 16 days. If the figures for the geriatric service and for the tuberculosis patients are excluded the average duration of stay was 13.5 days. Diabetes and its recognized complications accounted for 1,623 days, and the average duration of stay of this group was 14 days (115 cases).

A census taken in the hospitals of the area at the end of November, 1955, showed 44 diabetic patients in hospital. Of these, 15 were in the wards of the general hospitals in Truro, Penzance, Redruth, and Falmouth; 13 in St. Lawrence's Mental Hospital, Bodmin; 13 in the hospitals of the geriatric service; and 3 (all cases of pulmonary tuberculosis) in Tehidy Sanatorium.

From a study of all the hospital figures it is possible to hazard a guess at the bed requirements for diabetics which may serve as a guide to those planning diabetic units. On

the basis of an average stay of 14 days a 15-bed unit in this area should be able to cope with approximately 300 admissions per annum, which is 73 in excess of the total admission figure for the area for the year 1954. Approximately three-fourths of the admissions were to medical wards, so that, given an even admission rate, 12 beds could deal with all medical admissions. There are, however, seasonal fluctuations, so that the actual range of bed occupancy for medical diabetics is from 5 to 18. There are also generally some patients waiting for admission. Taking all these factors into consideration, it seems reasonable to suggest a figure of one medical bed for every 100 of the diabetic population. The provision of a similar number of long-stay beds to cope with social and special clinical problems seems necessary.

Table XIII shows the cause of death, so far as can be ascertained, of 76 diabetics who have died in this area in the past three years. The figures were obtained partly from a follow-up of all diabetics who cease to attend the clinics at Truro and Redruth and partly from a search of hospital records. It is believed that these are more accurate than those obtained from registration returns. Joslin *et al.* (1952) estimate that in the United States only about two-thirds of diabetics who die have their diabetes mentioned on the death certificate. It seems probable that the practice here is similar.

TABLE XIII.—*Recorded Causes of Death in 76 Diabetic Cases*

	No. of Cases	%	Registrar-General (Total Pop.)
Cerebrovascular accidents	17		
Coronary thrombosis	11	51·3	59
Congestive failure	9		
Kidney disease	2		
Diabetic coma	7	9·2	
Respiratory infection	6	7·9	7
Cancer	6	7·9	17
Post-operative deaths	4	5·3	
Senility	4	5·3	
Bleeding peptic ulcer	2	2·6	
Pulmonary tuberculosis, suicide, appendix abscess, subcutaneous abscess, pulmonary embolism, acute pancreatitis, urinary infection, gangrene ..	.8	10·5	

The figures in the third column provide a comparison with those derived from the Registrar-General's (1955) returns for Cornwall for the year 1954. It seems surprising that there is not a greater incidence of death from cardiovascular and renal disease in diabetics than in the general population. The series, however, is a small one, and it is possible that the figures might look substantially different if the investigation were extended for 10 years. The number of deaths from diabetic coma (seven in three years) is small, but could probably be further reduced with better liaison between hospital and general practitioner. In a concentrated urban area, with good hospital facilities for dealing with this emergency, deaths from diabetic coma might well be eliminated.

Table XIV shows the age at death of 129 cases (50 men and 79 women) for which this information was available. It is worth noting that the peak decade for deaths is the eighth for men and seventh for women. The average age at death of the 50 men was 68.9 years and of the 79 women 66.1 years; for both sexes it was 67.1 years. The figure compares with that of 61.9 years given by Joslin *et al.* (1952) for 656 of their own patients. We are, however, dealing with an older population in West Cornwall, which may partly explain the high average age at death. It should be remembered also that the figures given are derived from a follow-up of clinic patients personally supervised: the figures for the whole diabetic population would almost certainly be less favourable.

TABLE XIV.—*Age at Death of 129 Patients*

Age:	0–39	40–49	50–59	60–69	70–79	Over 80
Men	2	2	8	11	18	9
Women	2	1	16	32	26	2
Total ..	4	3	24	43	44	11

Average age at death: men, 68·9 years; women, 66·1 years.

A study of registration figures for the administrative County of Cornwall for the year 1954 discloses the fact that 54% of male deaths and 67% of female deaths occurred at 70 or over. The corresponding figures in this diabetic series are 54% (male) and 35% (female). It appears, therefore, that diabetes as seen in Cornwall has a definite effect on the expectation of life in the female patient, but little or no effect on that of the male.

Summary

In a survey of diabetes in West Cornwall the incidence of the disease has been found to be 5.6 per 1,000 of the population. This figure is high in comparison with previously published figures for the country as a whole.

The sex distribution (3 female : 2 male) follows that of the country as a whole.

An attempt has been made to measure the load on the community by assessing the work done by general practitioners, district nurses, hospitals, and the patients' relatives and families.

A study of the age of onset shows a tendency for males to predominate up to age 40, with a striking excess of females in the sixth and seventh decades. There is a tendency for male predominance to reappear in old age.

Less than 50% of the patients present with the classical symptoms of thirst, polyuria, and weight loss.

Seventy-seven per cent. of the patients attend a general medical or diabetic clinic.

The problems of the home are mainly those of insulin administration and intercurrent illness: 80% of male and 62% of female diabetics requiring insulin administer it themselves.

For those unable to give their own insulin the wife usually provides the necessary assistance for the helpless husband; to the dependent female patient help is most often given by the daughter, district nurse, or husband.

More than three-fourths of the patients attending the clinics had no illness requiring rest in bed during the course of a year. The average number of days spent in bed with sickness was 4.9 in the year 1954 and 4.1 in 1955. The female patient tended to have rather more illness than the male. Respiratory illnesses predominated in the home. Diabetes and its complications were responsible for only 15.5% and 13.8% of all days in bed in the two years investigated.

The district nurse visits 15.1% of all diabetic patients in a year and is responsible for daily insulin administration in about 6.4% of all patients.

The general practitioner sees the average diabetic patient 10 times in the year. He is consulted by 91% at some time during the year. Home consultations predominate for women and surgery consultations for men.

The commonest reason for admission to hospital was initial stabilization: 42.5% of all admissions were for reasons not connected with the diabetes.

It is suggested that one medical bed for every 100 of the diabetic population is required in this area.

Cardiovascular disease was responsible for death in more than half of 79 patients followed up. The disease in Cornwall appears to affect the expectation of life in the female but not in the male. The age at death for both sexes was 67.1 years.

I am indebted to the 48 general practitioners who co-operated in this survey; to Miss A. White, who provided the information on the work of the district nurses; and to the hospital secretaries and matrons for figures of diabetic admissions.

APPENDIX : QUESTIONARY SENT TO G.P.s

Patient's initials.....
Present age if known .....
Sex .....
Whether attending a clinic:
(*a*) Diabetic clinic .....
(*b*) General medical .....
(*c*) Other .....
Whether at present a hospital in-patient:
(*a*) General medical ward .....
(*b*) Chest hospital .....
(*c*) Geriatric service .....
(*d*) Mental hospital .....
(*e*) Other .....
If no hospital contacts, diagnosis based on
(*a*) Previous hospital investigations .....
(*b*) Symptoms and urinary findings .....
(*c*) Blood-sugar examination .....
During 1954 how many visits did this patient require:
(*a*) Home visits .....
(*b*) Surgery attendances .....
Is this patient at present having insulin? .....

Number of list patients surveyed .....
Number of diabetics found .....
Private diabetic patients under your care .....

Remarks:
If information not available enter O. Signature:

REFERENCES

General Register Office (1956). *Studies on Medical and Population Subjects*, No. 9. H.M.S.O., London.
Joslin, E. P., Root, H. F., White, P., and Marble, A. (1952). *The Treatment of Diabetes Mellitus*, 9th ed. London.
Registrar-General (1954). *Quarterly Returns for England and Wales*. H.M.S.O., London.
—— (1955). *Statistical Review of England and Wales for 1954*. H.M.S.O., London.

OUTBREAK OF STAPHYLOCOCCAL INFECTION IN A SURGICAL WARD

BY

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Outbreaks of staphylococcal infection in surgical wards are not very uncommon, but they are rarely recorded in print. This is partly because opportunities are not often available for extensive investigation, and in consequence the source of infection can rarely be traced. Nevertheless, the paucity of published records makes more difficult the study of new outbreaks as they occur.

It so happened that the outbreak described in this paper could be investigated in some detail, and, perhaps for this reason, we have been able to indicate a possible way in which infection may have been spread.

Clinical Features

The surgical unit concerned consisted of an operating theatre and a male and a female ward, each containing 25 beds. The wards were large and airy and the beds were spaced approximately 6 feet (1.8 m.) apart. Before May, 1956, sporadic cases of staphylococcal infection had occurred in both wards. On May 2 a wound-book was begun in order that a more reliable measure of the incidence of sepsis could be obtained. Against each patient's name was entered the name of the surgeon, details of the operation, and the condition of the patient's wound during convalescence. Wounds in which pus could be seen were regarded as septic; patients whose operations were through infected areas were excluded in assessing the sepsis rate.

Between May 2 and June 25, 86 clean operations were performed : three of the patients died post-operatively from causes unrelated to sepsis; of the remaining 83 patients, 24 developed sepsis in their wounds (Table I). Most of this

TABLE I.—*Sepsis Developing in Clean Wounds, May 2 to June 25, 1956*

	No. of Operations	No. Infected	Other Staphylococcal Infections
May 2–6	7	4	
,, 7–11 ..	7	4	
,, 12–16 ..	8	2	1 chest infection
,, 17–21 ..	3	0	
,, 22–26 ..	10	0	
,, 27–31 ..	12	3	
June 1–5	7	2	1 urinary ,,
,, 6–10 ..	4	3	
,, 11–15 ..	9	3	1 chest ,,
,, 16–20 ..	9	2	2 chest, 1 urinary infection, 2 enteritis
,, 21–25 ..	7	1	1 chest, 1 urinary infection, 1 enteritis

sepsis was in the male ward, where 18 out of 43 patients became infected as compared with 6 out of 34 women. Six children brought from the children's unit in another part of the hospital to the operating theatre and returned after operation had no septic complications. *Staphylococcus pyogenes* was recovered in culture from 17 of the infected wounds. From two coliform bacilli were grown, and from five no swabs were taken.

Seven of the male patients developed staphylococcal infection of sites other than the operation wound, including five chest infections and three urinary infections. Finally, by June 25 three patients were found to have staphylococcal enteritis, and, because of this and the number of other infections, it was decided to stop operating, and the male ward was closed.

In addition, the male ward contained six patients operated on before May who, before or during May, became infected with staphylococci. Of these six, one had a pelvic abscess, two had infected wounds, two had urinary infections, and three had chest infections. One of these last patients developed an abscess involving most of the upper lobe of the left lung.

Staphylococci Responsible for Infection

The staphylococci isolated from infected wounds were all of a strain of *Staph. pyogenes* resistant to penicillin, streptomycin, and tetracycline, but at first sensitive to chloramphenicol and erythromycin. Later, as a result of treatment, variants resistant to chloramphenicol or erythromycin appeared. Twelve of the 17 staphylococci isolated from lesions were typed by the bacteriophage method and all were found to belong to one type, with the phage-sensitivity pattern 47/53/75/77. Some strains were lysed only by phages 53, 75, and 77, and some by 75 and 77 alone, but all were considered to belong to the same type. There was no correlation between these minor variations in phage-sensitivity pattern and the change in antibiotic sensitivity. Staphylococci that were not tested, but had the same sensitivity to antibiotics, were considered to belong to the same type in view of our failure at that time to find any strain with the same characteristics but belonging to a different phage type. With one exception, all the staphylococci isolated from patients with infective complications belonged to the epidemic type.

In the case of enteritis, chest infection, and urinary infection the staphylococci were plainly acquired in the ward. The source of the staphylococci infecting the wounds was not so clear. The majority of infections were thought on clinical grounds to be theatre infections, an early rise in temperature and pus developing deep in the wound being the main criteria.

Staphylococci in the Operating Theatre

In a report of post-operative wound infection occurring in another unit in this hospital (Shooter, Taylor, Ellis, and Ross, 1956) the opinion was expressed that infection originated from air-borne organisms sucked into the theatre from adjacent wards. There seemed less reason to incriminate air in this case.

There was some suction of air into the theatre from the corridor outside, but this was less than in the unit described before, and the total bacterial air counts in the theatre were substantially lower. Search for staphylococci in the theatre air showed a variety of types to be present. On May 30 50 cu. ft. (1.416 cubic metres) was sampled, and six staphylococcal colonies were recovered, five of which belonged to the epidemic type. Examination of 50 cu. ft. (1.416 cubic metres) of air on June 6 yielded three staphylococcal colonies, none of the epidemic type, and a further examination of 540 cu. ft. (15.29 cubic metres) of air on June 20 yielded 26 staphylococcal colonies, only 2 of the 25 typed being of the epidemic type.

Altogether the 35 staphylococci isolated included 15 different phage types. If the wound infections had been chiefly due to air-borne bacteria the staphylococci cultivated might have been expected to reflect the diversity of types present in the theatre air. The fact that they did not suggested some other source of infection.

A clue to this source was given by the examination of nasal swabs from the theatre team. Swabs were taken from 17 members of the team, including surgeons, nurses, students, and the orderly, and from seven of these swabs *Staph. pyogenes* was recovered. From only one person, however, were staphylococci of the epidemic type isolated. Examination of this individual's movements strongly suggested that he was concerned with infection of the wounds. Of the 45 operations in which he took part 21 resulted in infection. On the other hand, of the 38 patients operated on in his absence, only three became infected, and of these one was infected with coliform bacilli, and the other two may have been ward infections. Furthermore, he had been on leave from May 14 to 27, and during this time, with the exception of the wound infection due to *Bacterium coli*, no patients operated on developed septic wounds.

The surgical members of the unit worked as two teams, and it was possible that infection was the result of some difference in technique or came from some other person. This appeared improbable in view of the failure to detect any other carrier of the appropriate staphylococcus, and was not supported by a more detailed analysis of the wound-book. The team to which the carrier did *not* belong carried out 29 operations, three of which were followed by sepsis. The other team, with the carrier, performed 54 operations, and 21 of these patients developed infected wounds. However, of these 54 operations, 40 were done in the carrier's presence, and 20 of the 21 infections came in this group. Of the 14 patients operated on in his absence, only one became infected, and that infection was due to *Bact. coli*.

On three occasions the carrier was examined after he had been wearing rubber gloves; his hands were moist, and staphylococci of the epidemic type could be recovered from the fingers and the insides of the gloves. The same finding was recorded after preliminary washing of the hands with soap and water and a scrubbing-brush. In two of these experiments he was dressed in clean surgical uniform and incarcerated in a sterile room for 10 minutes. On neither occasion were staphylococci of the epidemic type recovered from the air. Such staphylococci were, however, isolated from the air when he was shut in the room in his ordinary clothes. The carrier yielded a heavy growth of staphylococci from his nose on all the occasions on which he was examined; his faeces also yielded numerous staphylococci of the same type.

Staphylococci in the Wards

During this investigation there was less wound sepsis in the female ward than in the male ward, only 6 women out of 34 developing septic wounds, as compared with 18 out of 43 men. There was still, however, a suggestion that the carrier in the theatre was concerned, since of the 15 operations on female patients which he attended four were followed by sepsis, whereas of the 18 when he was absent only two wounds were infected, and in one of these the cause was *Bact. coli* and the other was almost certainly a ward infection. The patients in the female ward were also free from staphylococcal complications.

In the male ward *Staph. pyogenes* was carried in the nose by 7 out of 10 nurses, but only one of the strains was found to be of the epidemic type. This nurse, and the carrier from the surgical team, constituted a source of infection in the ward, but a very much more prolific source was provided by the patients themselves. This applied particularly to the patient with an extensive lung abscess who was present in April and throughout May. During most of the period this elderly man was producing copious sputum which despite treatment contained very large numbers of staphylococci.

Air samples were taken in the ward on May 10, 11, 18, and 22, and June 13 (Table II). In the first samples, other strains besides the epidemic strain were present, but by May 18 the epidemic type was predominant, and it remained so.

TABLE II.—*Staph. pyogenes in Air Samples Taken in the Male Ward, May 10 to June 13, 1956*

Date	Volume of Air Sampled		*Staph. pyogenes* Colonies	
	cu. ft.	m.³	No.	Proportion Epidemic Type
May 10 ..	60	1·70	22	4/11
,, 11 ..	60	1·70	8	2/5
,, 18 ..	125	3·54	29	11/12
,, 22 ..	120	3·40	14	7/8
June 13 ..	459	13·00	623*	22/22

* Estimated number on phenylphthalein phosphate plates: coagulase tests done on 158.

In all the samples counts of general bacteria ranged between 19 and 51 colonies per cubic foot (0.028 cubic metre) of air.

Air collected on June 17 in the corridor joining the male and female wards to the operating theatre showed *Staph. pyogenes* to be present. Of 26 strains tested, 10 belonged to the epidemic type.

Further evidence of the large number of staphylococci present in the male ward was given by examination on June 27 of blankets from three patients with staphylococcal enteritis and of eight of the bed curtains. Both blankets and curtains were tested by the sweep-plate technique (see Blowers, Potter, and Wallace, 1955), and all were found to be heavily infected. Of the many staphylococci recovered, 28 were typed, and all but one were of the epidemic strain.

Closure and Cleaning

In view of the sepsis rate and the simultaneous onset of staphylococcal enteritis in three patients, it was decided on June 28 to cease operating, and to clean and, if possible, disinfect the male ward. All the patients were therefore removed, either by discharge or by transfer to isolation in other parts of the hospital. Movable articles in the ward were disinfected by boiling, treating with formalin vapour, or spraying with sodium hypochlorite solution as seemed

most appropriate. The ward itself was most vigorously cleaned by spraying from ceiling to floor with a power-driven spray of sodium hypochlorite solution (0.17%).

No such steps were taken in the female ward. This was partly because of the better record of the ward, and partly because the result of examination of the air on June 27 was reassuring. Altogether 375 cu. ft. (10.62 cubic metres) of air was examined, and, although 16 colonies of *Staph. pyogenes* were isolated, none belonged to the epidemic type. General bacterial counts were also low, averaging 6.6 per cu. ft. (0.028 cubic metre). The decision not to close this ward was justified by the fact that none of the 39 patients operated on before the unit finally closed on August 22 for redecoration developed sepsis due to *Staph. pyogenes*.

Opening of the Male Ward

During the cleaning of the ward the carrier in the surgical team and the nurse who carried the epidemic staphylococcus left the unit. The ward was opened on July 3 and stayed open until August 22. At first, examination showed a great reduction of the staphylococcal and general bacterial population. For example, the count for the latter ranged between 5 and 10 colonies per cu. ft. (0.028 cubic metre) of air on July 3 and 4. Sweep-plates taken from 10 blankets on July 3 and 4 failed to grow any staphylococci. As the ward was reoccupied bacterial counts rose, and the results of sampling for general bacteria in the air showed a steady climb to a maintained level—approximately 16 colonies per cu. ft. (0.028 cubic metre). This climb was accompanied by an increase in the staphylococci in the ward air (Table III), and a return of the epidemic type.

TABLE III.—*Colonies of Staph. pyogenes Recovered from the Air of the Male Ward After Cleaning*

Date	Volume of Air Sampled		*Staph. pyogenes* Colonies	
	cu. ft.	cu. m.	No.	Epidemic Type
July 3 ..	100	2·83	1	0
,, 4 ..	195	5·52	3	0
,, 10 ..	195	5·52	5	1
,, 31 ..	200	5·66	12	0
Aug. 13 ..	110	3·11	12	3
,, 14 ..	75	2·12	29*	26

* Includes 18 colonies from 5 cu. ft. (0·14 cu. m.) when a bed was being made.

There was again little to suggest that the staff were chiefly responsible. Nasal swabs taken from 34 members of the unit on August 9, 10, and 11 failed to yield any staphylococci of the epidemic type.

At first the return of staphylococci to the surgical ward was not accompanied by infection. This freedom was, however, only temporary, and infections occurred on July 27 and August 2, 4, and 7. Two of these—an infection around an indwelling catheter and a septic wound—were caused by the type of staphylococcus previously present in the ward. The other two, an enteritis and a wound infection, were due to a staphylococcus of different type. During this time 47 men underwent clean operations.

On August 22 the ward was closed for painting, which had been previously arranged.

Discussion

Outbreaks of staphylococcal infection have been attributed to a variety of sources. Wells and Wells (1936, 1938) and Hart (1937) suggested the possibility of air-borne infection during operations, and, more recently, Blowers, Mason, Wallace and Walton (1955) and Shooter *et al.* (1956) described wound infections which they thought were due to staphylococci from the air of the operating theatre.

In other cases infection was apparently transmitted to the patients by a single carrier, as in the outbreak described by Devenish and Miles (1939). They drew attention to the frequency with which surgical gloves are punctured at operation, and suggested that infection might be caused by staphylococci squeezed through perforations in the gloves.

A third mode of transmission, recorded more for streptococcal than for staphylococcal infection, is from case to case at the time of wound dressing by way of contaminated fingers and instruments (for example, Miles *et al.*, 1940).

In the present outbreak there seemed little doubt that a proportion of the wounds were infected at the time of operation, and glove punctures may well have been the way in which the carrier in the surgical team infected patients, as normally about a third of the gloves worn by members of the surgical staff of the hospital are found to have perforations after use. In retrospect, direct proof is unobtainable, and the possibility that staphylococci from the carrier found their way into the wound by some other route cannot be excluded.

Though in our opinion there seemed to be good grounds for suspecting that the theatre infections originated from a single person, the position in the ward was considerably more complex. The key to the situation seemed to be the great ability of the epidemic staphylococcus to colonize wounds and lungs and other sites. No reliable method exists for testing in the laboratory the disease-producing potentialities of strains of *Staph. pyogenes*, but there is no doubt that some strains are in fact able to spread more readily than others and are more able to cause infection. Our strain showed considerable versatility in the way in which it caused a variety of infections and while the patients were under treatment became resistant to chloramphenicol or erythromycin. It seemed also to be able to establish itself to the exclusion of other strains of staphylococci which had been present earlier. In consequence, not only was it the only strain to be recovered from wounds by mid-May, but it became increasingly preponderant in the ward air (Table II) and was practically the only strain to be recovered from the ward curtains on June 27.

Some of the ward infections may have originated from the male carrier or the nurse, but these two individuals are less likely to have been the cause of some of the other complications; for instance, chest infections or enteritis. Compared with the patients, the carriers must have contributed only a small proportion of the staphylococci present in the ward, and it is tempting to suggest that the start of the epidemic was the elderly patient with the lung abscess. Once established, new victims maintained the staphylococcal strain. To what extent the extensive spread of the staphylococcus should be attributed to inherent properties and to what extent to the efficiency with which two or more particular carriers were able to spread it must remain unknown.

During this epidemic we were able to examine the air for general bacteria and for staphylococci. General air counts appear to reflect largely the activities of the ward and are not necessarily linked with infection. It is misleading to use them alone as a gauge of the effectiveness of measures designed to prevent the spread of infection. Staphylococcal air counts, on the other hand, particularly when phage-typing is available, may be of more help. We used low counts and the absence of the epidemic type in deciding to keep the female ward open, and when more is known it may be possible to estimate the risk of infection in a ward from the number of pathogenic staphylococci present in the environment, and the extent to which they belong to one phage type known to be responsible for infection. Whether this is so or not must depend, of course, largely on whether the staphylococci are actually transmitted to the patients through the air. Further surveys similar to ours are needed to discover whether high air counts precede the transfer of infection or whether they merely reflect transfer that has already happened by other routes.

Another unanswered question in our survey is why the female ward enjoyed its relative freedom from infection. Women are known to be less liable to post-operative chest infection than men, and during this period there was no patient in the female ward disseminating large numbers of staphylococci. Even so, the absence of the epidemic type

in the air collected on June 27 was surprising, and, taken in conjunction with the low general bacterial count, may represent some other factor such as the effect of differences in light or ventilation which we have not recognized.

Finally, the measures taken to disinfect the male ward appear to have been successful in that for a time they eliminated staphylococci and reduced the incidence of infection. From the information available, it is not possible to tell if the epidemic strain of *Staph. pyogenes* was brought back to the ward by a member of the staff from some other part of the hospital, or was brought in by a patient, or came from some unsuspected hiding-place which had escaped disinfection. This staphylococcus had been isolated from time to time in other parts of the hospital.

Summary

During a period of nine weeks, 24 of 83 patients undergoing clean operations in one surgical unit developed wound sepsis and seven developed other staphylococcal infections. All but one of the staphylococci tested from the wounds and other lesions belonged to one phage type.

In many cases wound sepsis seemed to follow infection acquired in the operating theatre, and there was strong evidence implicating one of the members of the surgical team in these infections.

Some cases of wound infection and most of the other infections seemed to have been acquired in the ward. It is suggested that one patient, who had a staphylococcal lung abscess, may have been responsible for widespread dissemination. The epidemic type was found in large numbers in the air and on bedclothes, curtains, etc.; it was carried by only one member of the nursing staff.

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REFERENCES

Blowers, R., Mason, G. A., Wallace, K. R., and Walton, M. (1955). *Lancet*, **2**, 786.
—— Potter, J., and Wallace, K. R. (1955). Ibid., **2**, 1087.
Devenish, E. A., and Miles, A. A. (1939). Ibid., **1**, 1088.
Hart, D. (1937). *Arch. Surg. (Chicago)*, **34**, 874.
Miles, A. A., Schwabacher, Herta, Cunliffe, A. C., Ross, J. Paterson, Spooner, E. T. C., Pilcher, R. S., and Wright, Joyce (1940). *British Medical Journal*, **2**, 855, 895.
Shooter, R. A., Taylor, G. W., Ellis, G., and Ross, Sir James Paterson (1956). *Surg. Gynec. Obstet.*, **103**, 257.
Wells, W. F., and Wells, Mildred W. (1936). *J. Amer. med. Ass.*, **107**, 1698.
—— —— (1938). *Amer. J. publ. Hlth*, **28**, 343.

The latest *Life Tables* volume of the Registrar-General's *Decennial Supplement for England and Wales, 1951* (H.M.S.O., 3s.), is based on the 1951 census populations and on the mortality experience in England and Wales as a whole during the three years 1950–2. It shows that the expectation of life of a boy at birth has increased by nearly 15 years in the past 40 years; for a girl the increase is more than 16 years. These increases are largely the result of the immense improvement in infant mortality. In 1910–12 120 of every 1,000 boys born and 98 of every 1,000 girls born died before reaching their first birthday; the corresponding figures for 1950–2 were 33 boys and 25 girls. Women have fared better than men in the improvement of longevity. While for women there has been a continued substantial lightening of mortality even beyond the age of 80, for men the improvement has been much less. For men aged 60 the expectation on 1950–2 mortality is about 14¼ years, an increase of only three-eighths of a year on the figure 20 years earlier, whereas for women of that age it is 18 years, an increase of 1½ years. Persons living in England have a higher expectation of life than those living in Scotland or Wales. The rural districts show mortality lighter than the national average. Alone of all the major conurbations Greater London experienced lighter mortality than England and Wales as a whole.

CLINICAL AND LABORATORY ASSESSMENTS OF SENNA PREPARATIONS

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The use of standard British pharmacopoeial preparations of senna implicitly assumes that all such preparations will have, for the same dosage, similar laxative effects, and that, subject to individual variation, like effects will be consistently produced by the same dose of the same preparation at different times.

Work directed by one of us (J. W. F.) led to the development of a reliable bioassay procedure, using mice as the test animal (Lou, 1949); and the indications of laxative potency given by this method agree closely with those derived from a physico-chemical method of assay which determines the amount of the glycosides, sennosides A and B, present in different senna preparations (Fairbairn and Michaels, 1950). When applied to standard preparations of senna both these laboratory assay methods strongly suggest that senna pods and different samples of the *B.P.* liquid extract vary widely in potency: indeed, some of the extracts appear to be virtually inert. Further, *B.P.* liquid extract of senna appears to lose potency when kept over a period of time (Fairbairn and Saleh, 1953).

These indications, however, are based on laboratory techniques and need not necessarily apply in clinical practice. Although American workers (Miller and Alexander, 1949) have shown that bioassay results agree with laxative effects in humans, their subjects were normal (unconstipated) individuals. We here describe controlled clinical trials designed to measure the relative laxative potency of various *B.P.* senna preparations in constipated patients in hospital practice and to compare clinical results with the findings of chemical and biological assay. At the same time we have included in the trial a new granular type of senna preparation ("senokot"), for which total retention of the activity of the crude drug, consistency, and stability of potency are claimed (Ryan, 1951). Its laxative efficiency has been favourably assessed by several workers (*Brit. Ency. med. Pract.*, 1956), but no rigorously controlled observations have been reported.

Trial Design

Stage I

In the first stage of the trial, doses of the various senna preparations within the usually prescribed range were given to two groups of patients complaining of constipation; one group comprised expectant mothers in the obstetric wards of a general hospital—that is, "short-stay" patients—the other consisted of patients of both sexes in wards containing some elderly chronic sick—that is, "long-stay" patients. Four preparations were used at two dosage levels. The first levels, representing the average of the *B.P.* dosage range for the syrups and its approximate equivalent for senokot, were:

*1. Syrup of senna *B.P.* (A) 5 ml. (made from 1.25 g. senna pod)
*2. Syrup of senna *B.P.* (B) 5 ml. („ „ „ „ „)
3. Senokot granules .. 6 g. („ „ 0.9† g. „ „)
4. Blank syrup (taste and appearance similar to the *B.P.* syrup of senna).

One dose of each preparation was measured into glass containers. These were numbered in random order and used as required, in that order, in the wards. Any one patient received only one dose. The patient, the physician, and the sister-in-charge did not know the chemical or biochemical activity of the preparations which had been administered. A time limit of 24 hours was given for a bowel action to result. If none was produced, another type of laxative was given. The results of the administration of the senna preparations under trial were recorded on standard forms according to the time, type (full, scanty, or fluid), and frequency of motions.

The second dosage levels for the two syrups were increased by 40% above the first to 7 ml.—that is, approximately the maximum *B.P.* doses. To avoid drastic purging the dose of senokot was increased by only 25% to 7.5 g.

In the trials at these higher levels the trial procedure was repeated, but the inactive control preparation used was a chocolate granule containing no senna but otherwise indistinguishable from senokot.

Stage II

In the second stage of these trials the design was rather different. To minimize the effect of individual differences in response to laxatives, and to balance the effects of order of administration, each of the four preparations was administered in turn to elderly patients suffering from severe chronic constipation. A latin square type of design ensured that, within each set of four patients, each type of preparation was given once to each patient and once in each order from first to fourth (Table I).

TABLE I.—*Order of Administration of Preparations*

Patient	1st	2nd	3rd	4th
1	Syrup A	Syrup B	Senokot	Inert granules
2	„ B	Inert granules	Syrup A	Senokot
3	Senokot	Syrup A	Inert granules	Syrup B
4	Inert granules	Senokot	Syrup B	„ A

Half the patients were given doses at the average levels already indicated, half were given the higher dosages. Inert granules were used as controls throughout this stage. Otherwise the procedure was as before. If, however, no bowel action resulted after at least 24 hours, another type of aperient (not one of those under trial) was given and the trial resumed when the patient next complained of constipation.

To ensure that the dosage of the preparations being clinically assessed had a consistent sennoside content throughout the trials, the same samples of the three preparations were reassayed chemically before the second stage began. The results seen in Table II show the changes in sennoside content which had taken place. The apparent loss in potency by one-third noted in one of the *B.P.* syrups was then compensated for by increasing the average dose from 5 ml. to 7 ml., and the maximum dose from 7 ml. to 9.5 ml. The small sennoside content of the other *B.P.* syrups had virtually disappeared and no such compensation was practicable. Since the chemical content of senokot showed no loss, the dosage was left unchanged.

*The strongest and the weakest (on the basis of chemical and animal assay) of a number of different commercial samples of *B.P.* syrup of senna examined for this investigation.
†Reduced from 1.25 g. for the syrups owing to the anticipated higher laxative potency of senokot.

TABLE II.—*Chemical Reassays of Senna Preparations*

Preparation	Mg. Sennoside Content/Aliquot		
	1953	1955	Loss %
Syrup of senna B ..	0·3	Traces	100
„ „ „ A ..	2·8	1·9	33
Senokot	4·7	5·0	0

Summary of Results

In a preliminary analysis of the results two criteria of clinical potency were used: (1) The percentage of "satisfactory" results—that is, one or more full motions produced within the time limit. Motions described as scanty or otherwise unsatisfactory by the patient were ignored. (2) The total number of motions produced within the time limit without regard to the patient's subjective report.

TABLE III.—*Response to Control Preparations*

Type of Control	Type of Patient								
	Short-stay			Long-stay			Total		
	No. of Cases	Criteria 1	Criteria 2	No. of Cases	Criteria 1	Criteria 2	No. of Cases	Criteria 1	Criteria 2
Syrup ..	19	42%	1·3	13	23%	0·8	32	33%	1·1
Granules	16	63%	0·9	15	53%	0·6	31	58%	0·8
Mean	35	53%	1·1	28	38%	0·7	63	46%	1·0

Criterion 1: Satisfactory. Criterion 2: Number of motions per patient in 24 hours.

In Table III are compared the results, using each criterion, of the effects of the control substances during stage I in the two groups of patients. The difference in response rates between the two types of clinical case is in line with expectation. The large subjective element in the first criterion is evident in the increase in response achieved simply by substituting the more elegant and novel but inert granular preparation for the syrup type of control. On the other hand, the second criterion shows a satisfactory consistency between the two inert preparations. Partly for this reason and partly because the bioassay method on mice depends on counting the number of extra or fluid motions produced, this second criterion has been used throughout. To match the bioassay technique more closely and to minimize any differences between wards, the final result is expressed as a percentage increase in the number of motions produced by a particular senna preparation over the number produced in the same trial group by the inert control.

Table IV shows the results obtained in the first stage of the trial. As already seen, the response rate is greater among the short-stay patients, but the general trend of the results is similar in the two groups: in total, only the higher doses of one of the *B.P.* syrups and both doses of senokot produce a laxative effect which is appreciably better than the corresponding inert controls.

In the alternative trial design the individual variation is minimal, but the chronically constipated patient gives a less marked response to laxatives. Table V shows that in these circumstances again only the high doses of one syrup (syrup A) and both dosages of senokot effect any marked rise above the control level. An analysis of variance showed that these results were unlikely to be fortuitous ($P<0.01$).

It is clear that there are appreciable differences in laxative potency between the various preparations used; it

remains to decide whether these clinical indices agree with the results of chemical and biological assay. Table VI sets out the laboratory and clinical assay results for each preparation arranged in order of the potency as estimated by bioassay. The close correlation between chemical and biological assay methods is obvious. More striking, however, is the relationship seen in Figs. 1 and 2 between chemical assay results and clinical response rates where preparations are tested both separately on different patients and serially on the same patient. In the type of patient included in this trial no perceptible rise in clinical response above the control level of 100% occurs consistently with sennoside contents below about 15 mg. per dose.

TABLE IV.—*Clinical Response to Different Senna Preparations in Different Patients (Mean Number of Motions in 24 Hours)*

Preparation	Short Stay			Long Stay			Total
	No.*	Mean†	Control	No.*	Mean†	Control	Unweighted Mean Control
Average Dosage							
Syr. control	19	1·3	100%	13	0·8	100%	100%
,, senna B	14	0·7	54%	16	0·7	88%	71%
,, ,, A	17	0·6	46%	16	1·2	150%	98%
Senokot ..	14	1·8	138%	16	1·6	200%	169%
Maximum Dosage							
Granule control ..	16	0·9	100%	15	0·6	100%	100%
Syr. senna B	17	0·5	56%	15	0·7	117%	87%
,, ,, A	17	1·6	178%	14	0·9	150%	164%
Senokot ..	13	2·2	244%	14	1·1	183%	214%

* Number of patients. † Mean number of motions per patient.

TABLE V.—*Clinical Response to Different Preparations in Same Patients (Mean Number of Motions in 24 Hours)**

Preparation	Average Dosage		Maximum Dosage	
	Mean No.	Control	Mean No.	Control
Granule control	0·7	100%	0·4	100%
Syr. senna B	0·7	100%	0·6	150%
,, ,, A	0·6	86%	0·8	200%
Senokot	1·4	200%	1·2	300%

* 16 patients in each dosage group.

TABLE VI.—*Correlation of Chemical, Biological, and Clinical Assay Results*

Preparations	Mg. Sennosides Dose		Control Response	
	Chemical Assay	Bio-assay*	Different Patients	Same Patients
Syr. senna B (av. dose) ..	1·3	2·0	71%	100%
,, ,, B (max. ,,) ..	1·8	2·8	87%	150%
,, ,, A (av. ,,) ..	13·8	22·1	98%	86%
,, ,, A (max. ,,) ..	17·5	30·9	164%	200%
Senokot (av. dose)	29·0	51·0	169%	200%
,, (max. ,,)	36·0	65·0	214%	300%

* The bioassay figure is always higher than the chemical assay figure, since the sennoside A and B content represents only about two-thirds of the total biological activity (Fairbairn and Saleh, 1951).

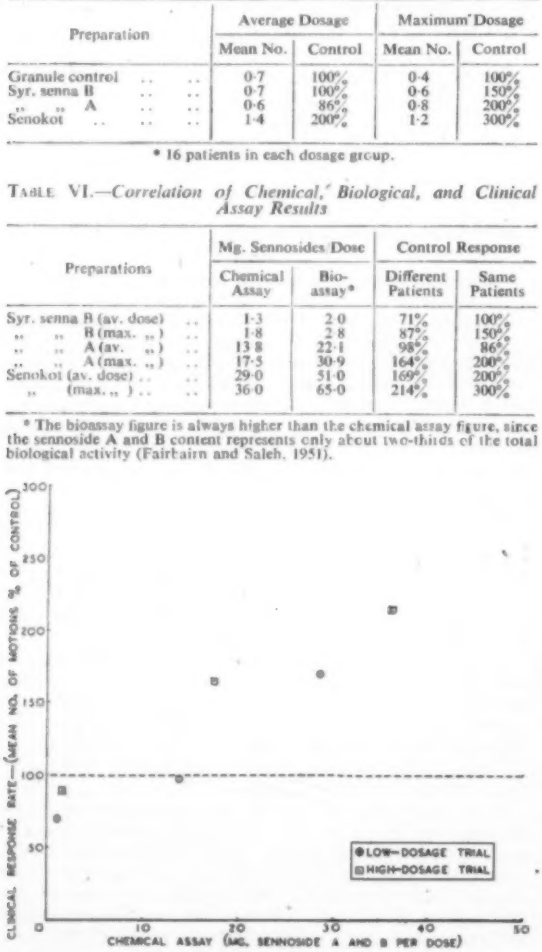

FIG. 1.—Stage I. Clinical and chemical assay results (in different patients).

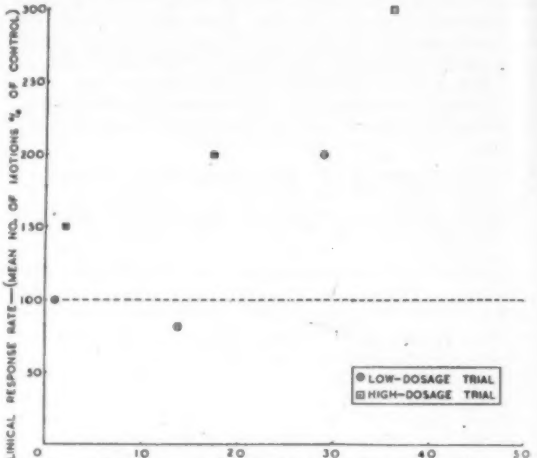

FIG. 2.—Stage II. Clinical and chemical assay results (in same patient).

Discussion

These clinical trials show how, by careful design and conduct, results of practical value can be simply attained with the use of crude criteria in a relatively minor but important ailment. The nature of the control preparation may be crucial when more subjective patient responses are involved. Changing the inert preparations from syrup to granules can produce a rise in the proportion of "satisfactory" responses from 33 to 58%. It seems better to minimize these psychological influences by using simple objective criteria such as the number of stools produced within 24 hours. For the group of short-stay hospital patients comparisons of preparations allocated separately and at random to different patients will give essentially the same indications as trials where individual variation in response is minimized by serial administration of drugs, in a balanced and randomized design, to the chronically ill.

The analysis of variance set out in Table VII suggests that while order of presentation is unimportant compared with the random variability in response of the same patient at different times, personal differences in responsiveness are of some account in trial design. This implies that the serial type of trial which minimizes these personal differences is, for this type of patient at least, the more effective test procedure. On the other hand, the greater responsiveness of the younger "short-stay" patient makes such cases more sensitive indicators of differing laxative potencies. Choice of method in clinical trials of laxatives can thus be decided simply on the basis of the number and type of clinical cases

TABLE VII.—*Analysis of Variance of Response Rates in Trials on Same Patients (Maximum Dose)*

Sources of Variation	Sum of Squares	Degrees of Freedom	Mean Square	Variance Ratio
Difference due to treatments	4·92	3	1·64	4·56*
Personal differences ..	18·23	15	1·22	3·39*
Order of presentation ..	1·17	3	0·39	1·08
Random within-person variability	15·16	42	0·36	
Total ..	39·48	63		

* $P < 0.01$.

available. Either method will indicate the clinically effective dosage range for the particular type of patient included in the trial.

Of particular importance is the introduction of chemical and biological methods of potency assay where results can be used to grade senna preparations in terms of their likely effect on the constipated bowel in humans.

We would emphasize the agreement between the various forms of assessment, laboratory and clinical, in indicating gross disparities between similar doses of apparently identical standard *B.P.* syrups. The laboratory tests confirm earlier suggestions of the serious deterioration which may take place in such aqueous preparations. Again, average doses of the two *B.P.* syrups tested clinically gave no better results than inert syrups. On the other hand, the dry granular preparation tested (senokot) proved to be chemically stable and to have the potent clinical effect which had been predicted from the results of both chemical and biological assay.

Summary and Conclusions

The design and conduct of controlled clinical trials of the therapeutic effect of different senna preparations are described. The results obtained in constipated patients of different clinical types have been compared with the potencies estimated from chemical assay of sennoside content and biological assay based on the laxative action in mice. It was concluded that: (1) Laxatives could be effectively graded by simple clinical trials in both short-stay hospital patients and the more chronically constipated elderly sick. (2) Clinical response rates are in general agreement with the results of both types of laboratory assay methods. Not only do apparently identical *B.P.* preparations of syrup of senna differ widely in their therapeutic effect, but, at average doses, the *B.P.* syrups tested were no better than inert controls. Chemical assay confirmed previous indications of deterioration in aqueous *B.P.* preparations. (3) A dry granular preparation of senna pod (senokot), used in dosages usually prescribed, proved to be chemically stable and to have a potent laxative effect.

We should like to thank the sisters in charge of the wards concerned, Sisters Anderson, Ronaldson, Cawthorn, and East, for their conduct of this trial, and we are indebted to Westminster Laboratories Ltd. for supplies of senokot and the specially prepared inert granules.

REFERENCES

Brit. Ency. med. Pract. (1956). Cum. Suppl., p. 87. London.
Fairbairn, J. W., and Malhaels, I. (1950). *J. Pharm. Pharmacol.*, **2**, 807.
—— and Saleh, M. R. I. (1951). Ibid., **3**, 918.
—— —— (1953). Ibid., **5**, 317.
Lou, T. C. (1949). Ibid., **1**, 673.
Miller, L. C., and Alexander, E. B. (1949). *J. Amer. pharm. Ass.*, Sci. Ed., **38**, 417.
Ryan, H. A. (1951). *Pharm. J.*, **167**, 115.

Speaking at the Royal Institution in London on February 15, Dr. MARGARET MEAD discussed factors in social evolution. Borrowing, either of isolated traits or of whole patterns of behaviour, was one of the essential mechanisms of human evolution, she said. In 1928–9 she had carried out an anthropological study of a Melanesian village in the Admiralty Islands, and had repeated the study 25 years later. In this time the villagers had established a small "distinctive imitation of Western democratic Christian society," with ideas drawn from Christianity, British administration, and the American expeditionary forces. Contact in childhood with adults who were perceived as being of the same order as the children—in this case, their own parents—and dissatisfaction among the adults with the state of their culture, seemed to have been two preconditions of this change. This state of affairs could be contrasted with treating children as lower or imperfect human beings, rearing them with the help of another class such as nurses or teachers, or letting older children or grandparents bring them up.

STANDARDIZED SENNA AS A LAXATIVE IN THE PUERPERIUM

A CLINICAL ASSESSMENT

BY

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For many years senna has been regarded as a safe laxative for pregnant and puerperal women. Variability in efficacy from case to case led to diminished use of the drug until in recent years a standardized preparation became available. For this preparation, marketed under the name "senokot," stability and consistency of potency are claimed (Ryan, 1951). A number of favourable reports have now been published (*British Encyclopaedia of Medical Practice*, 1956) and a preliminary trial suggested that senokot might be suitable for use as a routine laxative for puerperal women (Duncan, 1953). In this further clinical trial the laxative effect of cascara and senokot are compared.

Spontaneous Bowel Movement.—As a preliminary step 100 consecutive puerperal women (32 primiparae and 68 multiparae) were observed with regard to spontaneous bowel movement. No laxative was given. The findings are shown in Table I.

TABLE I.—*Bowel Movement After Delivery in 100 Cases*

	No. of Patients
First spontaneous action on 2nd day	4
" " " " 3rd "	22
" " " " 4th "	30
" " " " 5th "	15
" " " " 6th "	4
" " " " 7th "	1
" " " " 8th "	1
Enema required	23

Design of the Trial

All patients in puerperal ward A were given, as a routine laxative, tab. extract cascara *B.P.*, 6 gr. (0.4 g.), on the morning of the third puerperal day. No further laxative or enema was given for 48 hours.

In puerperal ward B exactly the same routine was followed except that the laxative used was "senokot" granules, 2 teaspoonfuls (equivalent to 11 gr. (0.7 g.) of senna pod). Patients who had been delivered by the abdominal route and 12 patients whose bowels moved spontaneously before the third morning were excluded from the trial. No other exceptions were made.

The interval between administration and bowel movement, and the nature of the first motion, were recorded. The patients whose bowels moved within 24 hours of the dose were regarded as having shown a positive response, and in these the number of bowel movements within the period was noted. These objective observations were made by senior members of the nursing staff. Subjective impressions, such as the severity of colic, were more difficult to assess.

Comparison of the Two Groups

The fact that the two groups are comparable in respect of parity, nature of delivery, and previous history in relation to aperients is shown by Table II.

TABLE II

	Cascara Series		Senokot Series	
	Multip.	Primip.	Multip.	Primip.
Spontaneous delivery without tear ..	78	14	74	21
Episiotomy, forceps, or tear ..	21	29	22	31
Total	99	43	96	52

Of the cascara series 37 patients had been in the habit of taking aperients before pregnancy, and a total of 58 had taken aperients during the pregnancy. Of the senokot series 29 patients had been in the habit of taking aperients before pregnancy and a total of 56 had taken aperients during the pregnancy.

Results

The results of the trial are summarized in Tables III–V.

TABLE III.—*Response to the Laxative*

	No. of Patients	
	Cascara Series	Senokot Series
Bowels open within 4 hours	6	20
,, first open between 4 and 12 hours	39	87
,, ,, ,, ,, 12 ,, 24 ,,	35	21
Total positive response within 24 hours	80 (56·3%)*	128 (86·5%)*
No response within 24 hours	61	19
Time of response not recorded	1	1
Total No. in trial	142	148

* $P<0.01$.

TABLE IV.—*Nature of Motions in Patients Showing a Positive Response Within 24 Hours*

Nature of First Motion	No. of Patients	
	Cascara Series	Senokot Series
Normal	29 (36·25%)	60 (46·9%)
Loose	23 (28·75%)	39 (30·5%)
Watery	3 (3·75%)	16 (12·5%)
Constipated	23 (28·75%)	10 (7·8%)
Not recorded	2	3
Total (positive response)	80	128

TABLE V.—*Number of Motions Within 24 Hours of Taking the Laxative*

	Cascara Series	Senokot Series
Patients having 1 motion	67	86
,, ,, 2 motions	9	23
,, ,, 3 ,,	2	9
,, ,, 4 or more motions	2	10
Total (positive response)	80	128

Resumption of Normal Bowel Habit.—After initial bowel movement 52 of the cascara series and 32 of the senokot series required further aperients or an enema during the puerperium. This is not regarded as significant, because 37 of the cascara series and 29 of the senokot series had been in the habit of taking laxatives regularly even before pregnancy.

Incidence of Gripes.—Of patients who had a positive response within 24 hours, 10 (12.5%) in the cascara series and 22 (17.2%) in the senokot series experienced gripes.

Lactation.—No difference in lactation performance was observed between the two groups. There was no evidence that either laxative had an adverse effect on lactation. Illingworth (1953) suggested that babies may develop diarrhoea when receiving milk from mothers taking senna or cascara. Experimental evidence (Tyson *et al.*, 1937; Friebel and Walkowiat, 1951) shows that senna glycosides do not appear in maternal milk. Certainly in this small series there was no instance of diarrhoea amongst the babies.

Previous History in Relation to Laxatives

For the purpose of comparison of the two groups in the trial a detailed history of the previous use of laxatives was taken. The results of this inquiry are presented as they give an indication of the habits in relation to laxatives in a small sample of married women.

Of the 95 primigravidae, 23 took laxatives regularly before they became pregnant. The drugs used were liquid paraffin in 5 cases, cascara in 5, salts in 4, doctor's prescription in 2, and various (1 each) in 7. During pregnancy a total of 39 primigravidae took laxatives regularly.

Of the 195 multiparae, 43 took laxatives regularly before the present pregnancy. The drugs used were liquid paraffin in 12, cascara in 9, "agarol" in 7, various in 15. During pregnancy 75 of the multiparae took laxatives regularly.

In view of the evidence that liquid paraffin prevents absorption of fat-soluble vitamins it is interesting to note that 43 of the 290 women studied took liquid paraffin regularly during the pregnancies.

Discussion

In the preliminary study it was found that 56 out of 100 patients had spontaneous bowel movements by the end of the fourth puerperal day. The positive-response rate in the cascara series (56.3%) shows no improvement on this. In the senokot series the positive-response rate was 86.5%, and this difference is statistically significant. In these positive-response groups a higher proportion of the senokot series had normal motions (46.9% compared with 36.25%), but also a higher proportion had loose or watery motions (43% compared with 32.5%). On these findings it is clear that with the dosage used senokot was a more effective laxative than cascara. The question arises whether this greater effect was merely a matter of size of dose. The pharmacopoeial dose of tab. extract cascara *B.P.* is 2–8 gr. (0.13–0.5 g.) (the dose used was 6 gr. (0.4 g.), which is three-quarters of the maximum *B.P.* dose) and of senna pod *B.P.* is 10–30 gr. (0.65–2 g.) (the dose used was equivalent to 11 gr. (0.7 g.), which is one-third of the maximum *B.P.* dose). The laxative effect should therefore have been greater rather than less in the cascara series. The reason for this discrepancy appears to lie in the fact that tab. extract cascara *B.P.* is unstandardized and contains only part of the original activity of the bark (Fairbairn and Mahran, 1953), whereas senokot is standardized and contains 100% activity of senna pod (Fairbairn and Michaels, 1950). A further point of practical importance is that for a fully active preparation such as senokot the upper limit of dosage for senna pod *B.P.* (30 gr.—2 g.) may be too high.

No untoward side-effects of the laxatives were noticed apart from gripes. The fact that a higher proportion of the senokot series had gripes is thought to be due to overdosage, because for the purpose of the trial it was necessary to give the same dose to all patients. Further experience with senokot has shown that an occasional patient experiences severe gripes in spite of smaller dosage, but this has been so infrequent that it has not detracted from the advantages of the drug. The majority of patients expressed the opinion that they preferred senokot to other laxatives which they had used in the past. This might be attributed to the novel form of the preparation in chocolate-flavoured granules. Senokot is also available, however, in tablet form, and a further series of 138 patients was studied under the same trial conditions with the exception that granules were replaced by tablets. The results of this further trial are so similar to those reported above that they are not given in detail. More than half of these patients said that they preferred senna to other laxatives they had used.

The continued use of senokot since the trial was completed has confirmed that it is a very satisfactory laxative for puerperal women. Its value during pregnancy is much more difficult to subject to a clinical trial, but it seems very satisfactory for this purpose. A few patients complaining of severe morning sickness have improved dramatically following regular administration of senokot. The question whether senna is more effective in this respect than other laxatives will require further study.

Summary

In a series of 100 puerperal women who were given no laxative in the puerperium only 26 had spontaneous bowel movements by the end of the third day, but 71 had had spontaneous motions by the end of the fifth puerperal day.

In a clinical trial, extract of cascara in a dose of 6 gr. (0.4 g.) (three-quarters of the pharmacopoeial maximum) was compared with a standardized preparation of senna in a dose of 11 gr. (0.7 g.) (one-third of the pharmacopoeial maximum). With the dosages used the senna (" senokot ") was shown to be a more effective laxative.

In the course of the trial it was noted that, of 290 women, 66 had been taking laxatives regularly before they became pregnant and that 43 had taken liquid paraffin regularly during their pregnancy.

I thank Miss G. C. Cruickshank, of the Maternity Department, Western General Hospital, Edinburgh, for her careful supervision of this trial, and Dr. D. H. McVie for his help with the earlier stages. I am indebted to Westminster Laboratories Ltd. for supplies of senokot.

REFERENCES

British Encyclopaedia of Medical Practice (1956). *Cumulative Supplement*, p. 87. London.
Duncan, A. S. (1953). *Lancet*, **1**, 602.
Fairbairn, J. W., and Mahran, G. E. D. H. (1953). *J. Pharm. Pharmacol.*, **5**, 827.
—— and Michaels, I. (1950). Ibid., **2**, 813.
Friebel, H., and Walkowiak, L. (1951). *Med. Klin.*, **46**, 208.
Illingworth, R. S. (1953). *Practitioner*, **171**, 533.
Ryan, H. A. (1951). *Pharm. J.*, **167**, 115.
Tyson, R. M., Shrader, E. A., and Periman, H. H. (1937). *J. Pediat.*, **11**, 824.

TREATMENT OF HYPOPITUITARISM

BY

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Before cortisone became available patients with pituitary insufficiency presented a difficult therapeutic problem, and many died as a result of adrenal crises or hypopituitary coma. All this has now been altered, and the major complications endangering life can readily be prevented by the addition of cortisone to existing methods of therapy. We have shown that patients with Addison's disease can be maintained in good health on cortisone as the sole method of treatment (Beck and Montgomery, 1956), and it is now generally recognized that, provided adrenal gland replacement is carried out, the therapeutic control of patients with pituitary insufficiency is usually satisfactory.

There is still diversity of opinion over what additional treatment, if any, is necessary in the latter. Sheehan and Summers (1954) report on the excellent response obtained in four cases treated with cortisone alone. On the other hand, Perkins and Rynearson (1952), Hart (1953), Querido *et al.* (1954), Whittaker and Whitehead (1954), and others advocate a wider range of substitution therapy and include deoxycortone acetate (D.C.A.), testosterone, and thyroid in addition to cortisone.

With the object of determining the simplest and most effective method of treatment for hypopituitarism, four patients suffering from post-partum pituitary insufficiency were studied as out-patients, and their response to traditional methods of therapy, supplemented with cortisone, was compared with their behaviour when treatment was continued on cortisone alone.

Method

The four patients were treated for periods ranging from 8 to 20 months on combined therapy consisting of D.C.A., sodium chloride, methyltestosterone, stilboestrol, thyroid, and cortisone (combined therapy), and subsequently for periods of 7 to 11 months on cortisone alone. Each patient was carefully assessed at three stages: before treatment started; when D.C.A., salt, testosterone, stilboestrol, and thyroid were withdrawn; and, finally, at the end of the trial period on cortisone. As a safeguard, each patient was interviewed monthly or more often as necessary, and the blood pressure and weight were recorded. At the three major examinations special attention was paid to the following points: energy and capacity for work and recreation; emotional tone, sense of well-being, and mental state; libido; menstruation; incidence and severity of infections and crises; tolerance of cold; weight and blood pressure; condition of hair and skin; and certain laboratory investigations. The decision to start the trial with combined therapy first, followed by cortisone alone, was made partly because we felt that the withdrawal of a drug providing a measure of relief of symptoms would be more readily noticed by the patients. An additional reason was that several patients were already on a modified form of combined treatment, so it was decided to extend and proceed with this aspect first.

Clinical details of the four patients together with details of treatment given are recorded in Table I.

Results of Treatment

Energy and Capacity for Work.—Profound weakness and lack of energy were characteristic of each case before the clinical trial started. A remarkable recovery was evident with combined treatment, and this improvement was maintained without any deterioration in three cases on cortisone alone. One patient felt well enough to resume her work as a weaver in addition to household duties. Another housewife was able to nurse an invalid relative living at some distance from her home. In the fourth case there was reappearance of asthenia and intolerance to cold, and thyroid had to be restarted seven weeks after its withdrawal.

Emotional Tone, Sense of Well-being, and Mental State.—The patients were depressed and low in spirits before treatment began, and mentally dull or sluggish. All returned apparently to normal on combined therapy, and no change was noticed by the patients, relatives, or physicians when therapy was continued on cortisone alone, except in Case 2, where mental sluggishness, depression, and misery were quickly apparent despite additional cortisone dosage. These symptoms were attributed to lack of thyroid, and they quickly regressed when this was restarted.

Libido.—This was lost in all subjects, and in two there was no improvement throughout the trial with either therapy, but libido had always been weak in these two women. However, one patient noticed some improvement in libido and sexual response with combined treatment, an improvement little altered with cortisone alone. Another patient reported almost immediate improvement in libido and return of orgasm on combined therapy. This was fully maintained with cortisone.

Menstruation.—All had complete amenorrhoea from the onset of their illness until three reported a three to four-day menstrual staining or bleeding during the periods of cyclical stilboestrol withdrawal. One patient (Case 4) did not take stilboestrol very regularly and did not menstruate. There was complete amenorrhoea again when stilboestrol was withheld.

Incidence and Severity of Infections and Crises.—One patient was initially admitted to hospital in coma. The other three had no history of frequent infections or crises before treatment. Since the start of treatment all have remained well and no difference has been apparent between the two forms of therapy.

TABLE I.—*Details of Cases*

	Case 1, Aged 38	Case 2, Aged 40	Case 3, Aged 48	Case 4, Aged 33
Clinical features before treatment	Severe post-partum haemorrhage 15 years before, with subsequent amenorrhoea. Tired, lifeless, unable to work. Intolerant of cold. Waxy pallor, pubic and axillary hair absent. 17-Ketosteroids 0 mg./24 hrs. B.M.R. −44%. †Radioactive iodine test in myxoedema range (T index 2·1)	Post-partum haemorrhage 17 years before, with amenorrhoea since. Depressed, intolerant of cold. Treated as case of myxoedema with thyroid. Admitted to hospital in semi-coma following respiratory tract infection. Hypoglycaemic. Immediate treatment with D.C.A., cortisone; glucose given. Pre-treatment investigations not done. Subsequent †radioactive iodine test in myxoedema range (T 1·55)	15 years' amenorrhoea following post-partum haemorrhage. Unable to work, intolerant of cold. Depressed, no interests. 17-Ketosteroids 0 mg./24 hrs. *Urinary 17-hydroxycorticosterone 0·5 mg./24 hrs. —following corticotrophin stimulation 7·5 mg./24 hrs. B.M.R. −65%. †Radioactive iodine test in myxoedema range (T 0·89)	3 years' amenorrhoea following post-partum haemorrhage. Tired, unable to do housework. Intolerant of cold. 17-Ketosteroid output 2·1 mg./24 hrs. Urinary 17-hydroxycorticosterone and B.M.R. levels unfortunately unavailable, but both were low and the B.M.R. result was below −25%. †Radioactive iodine uptake just above myxoedema range (T 2·9)
Combined therapy —details and duration of treatment	Cortisone 12·5 mg. daily, thyroid 3 gr. (0·2 g.) daily, D.C.A. trimethylacetate and testosterone isobutyrate, 50 mg. each every 4 weeks, stilboestrol 1 mg. daily for 3 weeks out of every four, and NaCl 3 g. daily, for 9 months	Cortisone 12·5 mg. daily, thyroid 2 gr. (0·13 g.) daily, D.C.A. trimethylacetate and testosterone isobutyrate 50 mg. every 4 weeks, NaCl 4 g. daily, for 20 months Stilboestrol, 1 mg. daily for 3 weeks out of every four, for 6 months	Cortisone 12·5 mg. daily for 2 months. Cortisone 25 mg. daily for 7 months For 9 months: thyroid 2 gr. (0·13 g.) daily. D.C.A. trimethylacetate and testosterone isobutyrate 50 mg. each every 4 weeks; stilboestrol 1 mg. daily for 3 weeks out of every four; NaCl 4 g. daily	For 10 months: cortisone 12·5 mg. daily: thyroid 3 gr. (0·2 g.) daily; D.C.A. trimethylacetate and testosterone isobutyrate 50 mg. each every 4 weeks; NaCl 6 g. daily
Cortisone alone and duration	Cortisone 12·5 mg. daily, 7 months	Cortisone 12·5 mg. daily, 7 weeks, then cortisone 25 mg. daily and thyroid 2 gr. (0·13 g.) daily thereafter	Cortisone 25 mg. daily for 11 months	Cortisone 12·5 mg. daily for 7 months

* Measurement of urinary 17-hydroxycorticosteroid output was carried out before and after the intravenous injection of 25 mg. of corticotrophin on two successive days.

† Radioactive iodine uptake test was carried out by measuring the radio-iodine output in urine over successive periods of 8, 16, and 24 hours after an initial oral dose of 10 μc. of ^{131}I in accordance with the method described by Fraser *et al.* (1953). They give the T index range in myxoedema as lying between 1·3 and 2·8.

Cold-tolerance.—Intolerance of cold was a major complaint of the untreated patients. All had the well-known characteristics of this symptom—namely, unwillingness to leave the fire, excessive underclothing, and cold extremities. On combined therapy they became normal—undergarments were shed and their extremities felt warm to touch. When treatment was modified and thyroid stopped, three continued to feel normal and did not seem to miss it, but Case 2 relapsed almost immediately and thyroid had to be restarted. Of particular interest is the fact that thyroid was withheld during the month of January, 1955. This and the following two months were colder than usual, so that the apparent normal response to cold in three patients on cortisone alone was surprisingly good.

Electrolytes and Blood Pressure.—It has been previously shown (Beck and Montgomery, 1956) that cortisone will maintain satisfactory electrolyte and blood-pressure control in patients with Addison's disease. It was similarly found that electrolytes and blood-pressure levels of the four patients with hypopituitarism were satisfactorily maintained on cortisone alone (Table II), although it will be seen that there was no significant disturbance in blood chemistry in any case before treatment began. The initial blood pressure was low in three subjects with systolic levels of 100 mm. of mercury or below (Table III). A good response was obtained in all on combined therapy, and the improvement was well maintained when treatment was continued with cortisone alone.

TABLE II.—*Electrolyte Levels in mEq/litre*

	Case 1			Case 2			Case 3			Case 4		
	BT	CT	CA	BT	CT	CA	BT	CT	CA	BT	CT	CA
Na ..	136	145	146	137	148	141	138	154	136	—	160	146
K ..	4·5	4·2	4·4	5·2	5·9	4·7	4·4	4·1	4·1	—	4·4	4·1
Cl ..	103	105	103	—	108	99	104	107	108	—	106	103
CO_2CP	30	30	28	23	22	26	—	29	29	—	30	30

CO_2CP = Carbon-dioxide combining power.
BT = Before treatment.
CT = Combined therapy consisting of D.C.A., sodium chloride, methyltestosterone, stilboestrol, thyroid, and cortisone.
CA = Cortisone alone—for dosage, see Table I.

TABLE III.—*Blood Pressure in mm. Hg*

	Case 1	Case 2	Case 3	Case 4
Before treatment	100/60	85/70	110/70	90/65
Combined therapy	120/70	120/75	150/85	110/80
Cortisone alone	130/80	120/75	140/80	105/80

Blood pressures recorded are the averages of numerous recordings made at the three stages of clinical assessment.

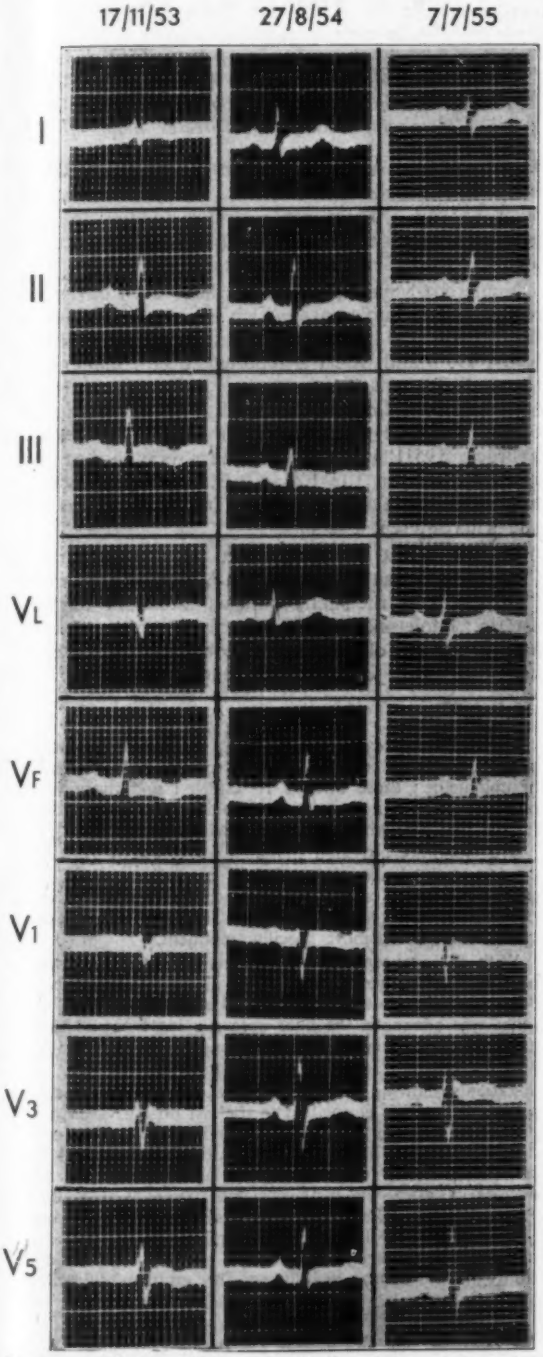
Weight.—Three patients gained 3, 17, and 19 lb. (1.4, 7.7, and 8.6 kg.) on combined therapy. On cortisone alone there was a further gain of 2, 4, and 1 lb. (0.9, 1.8, and 0.45 kg.) respectively. The fourth patient lost 10 lb. (4.5 kg.) on combined therapy, but regained 4 lb. (1.8 kg.) on cortisone alone.

Effects on Skin.—All four patients had dry atrophic skin with some fine scaling, and did not sweat. The characteristic waxy pallor and puffiness of the face associated with loss of pituitary function was well marked. With combined treatment there was considerable improvement. The skin became more supple and its dry scaling quality was replaced by a smooth texture. Three patients noticed recurrence of sweating. The unusual pallor was lost as colour came back to their cheeks and their facial contours resumed a more normal appearance. When treatment was continued with cortisone alone the improvement was maintained in two. One regressed slightly, but the skin of the other (Case 2) returned rapidly to the state existing before any treatment was given.

Effects on Hair.—Very similar findings were experienced regarding hair. Dry, lustreless scalp hair which was rapidly thinning was the finding in each patient. On combined treatment, hair growth improved to a certain extent and eyebrow regrowth was noted in two. All felt, however, that their hair had not returned in quality to that existing before their illness began. Three patients thought that there was no appreciable regression in hair growth or texture when combined treatment was stopped. A definite assessment could not be made for the fourth patient, as thyroid was withheld for only a brief period, and this was clearly too short an interval in which to notice definite worsening in the quality of hair and its growth. There was no change in axillary hair in any patient. Its complete loss in each, prior to treatment, was a feature. Pubic hair was absent or very scanty. Little if any change was noted with either form of therapy.

Electrocardiographic Changes.—All patients had the characteristic electrocardiographic changes associated with myxoedema—namely, low voltage, sinus bradycardia, and flat or inverted T waves. With combined treatment there was distinct improvement in three cases, with increased

voltage and upright or less negative T waves. This improvement was fully maintained in only one patient on cortisone alone; in two others there was definite regression in voltage and T wave formation (see accompanying electrocardiogram); in the fourth case an electrocardiogram was unfortunately not obtained while the patient was on combined therapy, but the graph recorded when she was on cortisone alone showed little change from the pre-treatment appearances. It was clear, therefore, that cortisone had not significantly altered the electrocardiographic pattern in her case.



Case 3. Electrocardiogram 17/11/53: before treatment; 27/8/54: after combined therapy for nine months; note improved voltage, T waves now upright in I, II, VF, V3, V5. 7/7/55: off all treatment except cortisone for 11 months; some regression in voltage and lowering of T wave in I, II, VF, and inversion in V5.

Discussion

From a study of the patients and their response to treatment it seems clear that the only drugs which played a significant part in their recovery were thyroid and cortisone. In only the following aspects, however, did treatment with cortisone alone seem to be inferior to that provided by combined therapy. Firstly, intolerance of cold and mental depression recurred quickly in one patient when thyroid was withdrawn, but were corrected when thyroid was restarted. Secondly, two patients found that the satisfactory response to treatment made by their skin regressed on cortisone alone. Finally, the improvement noted in the electrocardiogram on combined treatment deteriorated in two when therapy was continued with cortisone, and in one case cortisone failed to improve the electrocardiographic pattern. In each of these aspects the deterioration appeared to be related to withdrawal of thyroid, and where this was recommenced the situation improved.

It is noteworthy that in only one of the cases was it essential to restart thyroid after it was stopped. The other cases continued to do well on cortisone alone, and it was only by careful observation and questioning that any change was apparent in their clinical status. This has also been our experience with three other cases treated on identical lines with those in the trial. In only one of these were the effects of thyroid withdrawal noticeable, in circumstances resembling those in Case 2. Mental apathy set in, she felt cold, and energy declined. All these symptoms were reversed when thyroid was restarted.

It is difficult to understand why in only two cases out of a total of seven, such profound reactions should be experienced following the cessation of thyroid medication. All the patients had clinical evidence of thyroid dysfunction, and, where carried out, basal metabolic rates and radioiodine tests were in the myxoedema range. In the cases that continued to do well on cortisone alone there was unequivocal evidence of thyroid dysfunction. The only feature common to the two cases under discussion was that both had been treated previously with thyroid, having been incorrectly diagnosed as suffering from myxoedema, while the remaining cases had been untreated when first seen. It may be that the earlier treatment with thyroid had in some way made them dependent or sensitive to the drug so that its withdrawal was quickly followed by symptoms of deprivation. Suppression of the thyroid gland due to long-term replacement therapy would not be a factor in this secondary type of hypothyroidism where deficiency of thyrotrophic hormone is the primary defect.

The well-known improvement that occurs in the electrocardiogram when patients with myxoedema are treated with thyroid, coupled with the improvement noted in the three cases on combined therapy and subsequent regression when thyroid was withdrawn, suggests that thyroid was mainly responsible for the improvement. This action of supplementary thyroid therapy is considered to be important, and to be a further indication for routine treatment with this drug when there is clinical evidence of thyroid gland deficiency.

The stopping of D.C.A. and salt did not apparently give rise to any symptoms, nor could we detect any significant change in the patient's clinical condition. One abnormally high serum sodium level was reduced to the normal range when these were withdrawn. However, as has been previously shown, cortisone is adequate to keep patients with Addison's disease healthy, so that nothing is gained by the use of additional drugs in secondary adrenal failure.

Testosterone is frequently given to patients with hypopituitarism in order to improve strength and energy, and to restore normal sexual libido (Hart, 1953; McCullagh, Skillern, and Schaffenburg, 1954; Williams, 1955). Sheehan and Summers (1954) found, however, that cortisone was

more effective than testosterone in the treatment of hypopituitarism, and that the only additional effect obtained when the two drugs were given together was an increase in growth of body hair. Whittaker and Whitehead (1954) gave additional testosterone to the maintenance treatment with cortisone in two male patients, and found increase in libido was produced. No change, however, was noticed in two female patients on the addition of testosterone to their treatment. In this series there was no conclusive proof that testosterone had any effect except to produce unwanted facial hair in one patient, and any general improvement in strength and energy or in libido with combined therapy appeared to be adequately maintained on cortisone alone. From these findings we suggest giving testosterone only to those female patients complaining of loss of libido who fail to improve with a combination of cortisone and thyroid. In male patients, routine testosterone is probably advisable, especially those in the younger age groups.

No definite conclusions regarding the value of stilboestrol can be drawn from this investigation because no detailed gynaecological studies were carried out. It was our impression, however, that stilboestrol made little, if any, difference, and its withdrawal caused no noticeable effect. As a method of treatment, therefore, we would not advise its routine use unless genital atrophy is so severe as to cause symptoms or unless oestrogen-withdrawal bleeding is desired for psychological reasons.

Summary and Conclusions

A clinical trial in which four patients with post-partum pituitary insufficiency were treated for varying periods on combined treatment consisting of D.C.A., sodium chloride, testosterone, stilboestrol, thyroid, and cortisone, and on cortisone alone, is described.

Three patients continued in good health on cortisone alone, while one patient relapsed and had to continue with thyroid.

Cortisone alone was thought to be inferior to combined therapy in respect of minor changes in skin in two patients, regression of the electrocardiogram in two, and return of cold-intolerance in one. It appeared that these changes were related to the withdrawal of thyroid, as they quickly improved when this drug was restarted.

From the study of these four patients and others treated since the trial ended, we regard cortisone and thyroid as the essential drugs to maintain good health in hypopituitarism. While cortisone alone seems to be little inferior to combined therapy, the effect of thyroid on the skin, electrocardiograms, and in some cases (which are apparently often unpredictable) intolerance to cold makes its routine use desirable. D.C.A. and salt therapy are unnecessary and complicate treatment, while testosterone is not advocated as routine therapy in female patients unless libido remains deficient without it.

We thank Professor G. M. Bull for allowing us to treat one of his patients and for his advice; Dr. R. S. Allison, who allowed us to study Case 4; Dr. J. A. Smyth and Mr. D. W. Neill for carrying out the biochemical estimations referred to in this study; and Mr R. G. Wood for the illustration.

References

Beck, R. N., and Montgomery, D. A. D. (1956). *British Medical Journal*, **2**, 921.
Fraser, R., Hobson, Q. J. G., Arnott, D. G., and Emery, E. W. (1953). *Quart. J. Med.*, **22**, 99.
Hart, F. D. (1953). In *Cortisone and ACTH in Clinical Practice*, edited by W. S. C. Copeman, London.
McCullagh, E. P., Skillern, P. G., and Schaffenburg, C. A. (1954). *Cleveland Clin. Quart.*, **21**, 31.
Perkins, R. F., and Rynearson, E. H. (1952). *J. clin. Endocr.*, **12**, 574.
Querido, A., van der Werff ten Bosch, J. J., Blom, P. S., and van Gilse, H. A. (1954). *Acta med. scand.*, **149**, 291.
Sheehan, H. L., and Summers, V. K. (1954). *British Medical Journal*, **1**, 723.
Whittaker, S. R. F., and Whitehead, T. B. (1954). Ibid., **2**, 265.
Williams, R. H. (1955). In *Textbook of Endocrinology*, 2nd ed., edited by R. H. Williams, Philadelphia.

ASPIRIN INTOLERANCE

A COMPARATIVE TRIAL OF TWO MODIFIED ASPIRIN PRODUCTS

BY

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The use of aspirin preparations in rheumatic conditions is often attended by side-effects which preclude full relief of pain. These are gastric symptoms (nausea, heartburn, epigastric pain); salicylism (deafness, vertigo, tinnitus); and allergy (rash, bronchospasm).

Numerous aspirin preparations have been devised to reduce gastric intolerance, which is not without danger (Douthwaite and Lintott, 1938; Hurst and Lintott, 1939; Kelly, 1956) and which is reported to be commoner in rheumatic patients than in others. Fremont-Smith (1955) compares the incidence of 26% of 200 rheumatoid cases being intolerant with two other series (Paul, 1943; Tebrock, 1951) where the incidence in non-rheumatic cases varied from 3 to 10%. It is, however, unsatisfactory to compare series of cases from different centres and with different assessors.

In this series an aspirin and glycine preparation ("paynocil") was compared with a citrated preparation ("disprin") in rheumatic patients intolerant of plain aspirin; intolerance in this context being defined as inability because of gastric symptoms to take doses of aspirin sufficient to relieve the rheumatic pain.

Design

The following categories were excluded from the trial: patients receiving cortisone, corticotrophin, phenylbutazone, or colchicine; those allergic to aspirin; and those whose response to treatment was so modified by psychological factors that a reliable assessment was impossible.

The conditions treated included all types of rheumatic disease, with rheumatoid arthritics predominating in both sexes; but most cases of gout and the severest cases of rheumatoid and collagen disease fell into the excluded category requiring more specific treatment.

With these exceptions all patients admitted to research unit beds were given aspirin, 50 gr. (3.2 g.) daily in divided doses, and this dosage was adjusted as necessary until pain relief was adequate, the final dose ranging from 20 to 100 gr. (1.3 to 6.5 g.) daily. Appropriate physical treatment was also prescribed.

Patients showing intolerance were changed to disprin or paynocil, in doses equivalent to the last dose of aspirin, the drugs being chosen alternately on each ward. After further dose adjustment, if necessary, the other product was then substituted for a week (the dose again being altered if necessary), after which the original choice was resumed. Patients were asked for their preference, with reasons. Salicylism was rarely encountered and did not in itself cause us to change the drug; any changes made (for other indications) did not appear to influence this group of side-effects.

Results

Results in men and women are shown separately, but no attempt is made to isolate the conditions treated.

Table I shows that 25% of patients in the series were intolerant to plain aspirin; this agrees with previous reports. The incidence in men and women was similar.

TABLE I

	Men	Women	Total
No. of patients	71	107	178
,, intolerant to aspirin	19	26	45

Table II shows results obtained in the aspirin-intolerant cases. Of 23 given disprin first, 5 preferred it, 10 preferred paynocil, and 8 were indifferent; all the men who made a choice preferred paynocil. Among 22 given paynocil first, opinion was more evenly divided—8 for paynocil, 9 for disprin, and 6 abstaining.

TABLE II

	Disprin Tried First			Paynocil Tried First			All Cases		
	M	F	Total	M	F	Total	M	F	Total
No. of patients ..	9	14	23	10	12	22	19	26	45
Disprin preferred ..	0	5	5	5	4	9	5	9	14
Paynocil ,, ..	5	5	10	3	4	7	8	9	17
Equally satisfactory ..	1	3	4	1	1	2	2	4	6
,, unsatisfactory	3	1	4	1	3	4	4	4	8

The relative efficacy of the three drugs sometimes differed; four patients found the buffered preparations less effective than plain aspirin, and two found the opposite. Disprin was judged more effective than paynocil in three cases and less effective in one. In this connexion (remembering that the efficacy of salicylates is diminished by alkalis such as sodium bicarbonate, which accelerates excretion) it is noteworthy that two patients in the "unsatisfactory" group experienced improved tolerance without apparent loss of analgesia when every dose (of paynocil in one case and of aspirin in the other) was accompanied by magnesium trisilicate.

One patient who reported that she never took aspirin because of her duodenal ulcer was given paynocil from admission; unfortunately her ulcer symptoms reappeared in a few days, and analgesics had to be withdrawn.

Conclusions and Comment

In this series 45 out of 178 rheumatic patients (25%) could not take adequate doses of aspirin. Of these 45 patients, 37 (82%) responded well to paynocil, disprin, or both. There was a slight majority (17 to 14) in favour of paynocil, but the numbers are too small for this to be significant. Most of those who expressed a preference for one product did so because of marked inability to stomach the other, demonstrating that "one man's meat is another man's poison," and that there is a place for both preparations in the treatment of rheumatism, since one may succeed where the other fails.

Summary

The freedom from gastric side-effects and the analgesic efficacy of two modified aspirin preparations—paynocil and disprin—have been compared in rheumatic patients intolerant of aspirin. Four-fifths of these patients benefited, and two-thirds expressed a definite preference for one or other of these drugs, the preferences being fairly evenly divided between the two. Differences in the analgesic effect were encountered, but no definite pattern emerged. The high incidence of aspirin intolerance in rheumatic patients was confirmed.

Acknowledgment is made to Messrs. Bencard Ltd. for the supply of the aspirin-glycine compound.

REFERENCES

Douthwaite, A. H., and Lintott, G. A. M. (1938). *Lancet*, **2**, 1222.
Fremont-Smith, P. (1955). *J. Amer. med. Ass.*, **158**, 386.
Hurst, A., and Lintott, G. A. M. (1939). *Guy's Hosp. Rep.*, **89**, 173.
Kelly, J. J. (1956). *Amer. J. med. Sci.*, **232**, 119.
Paul, W. D. (1943). *J. Iowa med. Soc.*, **33**, 155.
Tebrock, H. E. (1951). *Industr. Med. Surg.*, **20**, 480.

Medical Memoranda

Abdominal Periarteritis Nodosa

It is extremely rare for periarteritis nodosa to present as an acute abdominal emergency. However, several cases have been reported which conform to the pattern of gradually increasing abdominal symptoms culminating in an attack of peritonitis, at which stage laparotomy has been performed. The ultimate diagnosis has usually come from the histologist, but three cases are recorded (Manges and Baehr, 1921; Logue and Mullins, 1946) in which the nodules of periarteritis were visible to the naked eye within the peritoneal cavity. We wish to describe a fourth case in which these nodules were visible at laparotomy. Obviously the visibility of the periarteritic nodules depends on their size, and this in turn on the degree of necrosis in the arterial wall, which is one of the variable factors in this disease.

CASE REPORT

A young man of 20 was admitted to St. Mary's Hospital, Portsmouth, on May 13, 1955, with severe epigastric pain. At the age of 9 he had an attack of anterior poliomyelitis which left some residual wasting of the right thigh and leg; in the past year he had had attacks of asthma. For the preceding three weeks he had suffered from intermittent epigastric pain, diarrhoea, and aching pains in the right leg. During this period he had been on a "gastric diet," which had given him some relief. For the 18 hours before admission his epigastric pain had been severe, and he had acute nausea but had not vomited; his bowels had been open normally during that time.

He was thin, pale, and over-anxious. His temperature was 100° F. (37.8° C.), pulse 120, respirations 20. His tongue was clean and moist. The abdomen was tender in the epigastrium and the right hypochondrium; there was widespread moderate abdominal rigidity, with very marked rebound tenderness in the lower abdomen and faint bowel sounds on auscultation. Rectal examination did not reveal any peritoneal tenderness. The respiratory and cardiovascular systems were normal apart from a blood pressure of 148/110 mm. Hg. The urine contained no albumin. An abdominal radiograph showed there was no gas under the diaphragm. His leucocyte count was 17,000 per c.mm., of which 90% were neutrophils and 3% eosinophils.

It was thought that the patient had peritonitis, probably due to a perforated peptic ulcer, and laparotomy was therefore performed, the abdomen being opened through a right paramedian incision (Mr. J. D. Younghusband). There was no free fluid. The first striking finding was that the greater part of the small intestine, and especially the ileum, showed a blotchy, purplish discoloration which was maximal about 2 in. (5 cm.) from the ileo-caecal valve and extended throughout the small intestine with the exception of the upper 2 in. (5 cm.) of the jejunum. Two small round yellow sloughs about half an inch (12.5 mm.) in diameter were present in the bowel wall, indicating imminent perforation. There was little or no fibrinous reaction. The colon was mildly thickened, with generalized faint inflammatory changes. The mesentery, surface of the bowel, and parietal peritoneum were extensively studded with whitish pinpoint nodules; these were best seen in the mesentery of the small intestine and along the peripheral vascular arcades of the mesenteric vessels. Most of the abdominal contents felt gritty because of these nodules. The spleen was not enlarged or affected by the nodules; the liver also was normal. The appendix was not inflamed. The nature of the nodules and the condition affecting the bowel was obscure. The two areas of threatened perforation were carefully oversewn and specimens of the nodules removed for biopsy; the abdomen was then closed. The histological report (Dr. R. D. Clay) stated: "Serial sections of a nodule reveal it to contain a small artery with focal necrosis of the whole thickness of its wall

resulting in a minute aneurysm ; this is surrounded by granulation tissue, and the whole is infiltrated by polymorphonuclear and eosinophil cells. The basis of the lesion therefore appears to be a necrotizing arteritis, and a diagnosis of polyarteritis nodosa must be considered."

Post-operative progress was satisfactory, although on May 28 the patient had another severe attack of abdominal pain associated with lower abdominal tenderness, guarding, and a positive release sign. This second attack was treated by a short course of erythromycin, and he made an excellent recovery except for a continued diarrhoea. Sigmoidoscopy revealed "slight patchy reddening of the mucosa and one definite ulcer, with an irregular edge, red base, but without a slough." By this time his leucocyte count was 14,800 per c.mm. (12% eosinophils). A left pectoral muscle biopsy was performed (Dr. R. D. Clay) to confirm the diagnosis, and this showed "extensive fibrinoid necrosis of the arteriolar walls, which were densely infiltrated with cells mainly of the polymorphonuclear type. Surrounding the necrotic walls were zones of epithelioid cells, plasma cells, lymphocytes, eosinophil cells, and more polymorphs. This surrounding cellular infiltration was very marked, extending in some areas for a short distance between the muscle bundles. The biopsy thus showed periarteritis nodosa in the acute stage."

The diarrhoea slowly ceased together with some vague abdominal pain of which he had complained. On June 21 treatment with cortisone, 25 mg. twice daily, was begun, and within a week he was stronger ; the cortisone was then reduced to 25 mg. daily owing to oedema formation. After three weeks' treatment he was discharged home on the above dosage and continued to remain well apart from two attacks of asthma.

On July 29 he became unconscious after vomiting and was readmitted. The unconsciousness lasted only a few minutes and was followed by irrational and violent behaviour requiring heavy sedation. Later neck rigidity, a positive Kernig's sign, and bilateral early papilloedema developed ; a diagnosis of subarachnoid haemorrhage was made and confirmed by lumbar puncture. The blood pressure was 190/145 mm. Hg. The dosage of cortisone was increased to 100 mg. daily for eight days and gradually reduced to 25 mg. twice a day. He recovered satisfactorily from this incident, his blood pressure returning to 140/95 mm. Hg. One further attack of abdominal pain occurred. This was suggestive of peritonitis, but was relieved by sedation. Apart from this incident and slight frontal headaches he recovered well from the subarachnoid haemorrhage. He was eventually discharged on September 20 to continue with cortisone, 25 mg. twice daily. Since then he has remained well, though at no time has his blood pressure been below 140/95 mm. Hg.

COMMENT

Diseases of the abdominal viscera occupy first place in the minds of most surgeons, and it is only natural that they tend to be most commonly diagnosed in cases of peritonitis. Allen (1940) describes a case of abdominal periarteritis nodosa in which perinephric abscess, appendix abscess, and cholecystitis were considered before laparotomy was performed on a presumed diagnosis of penetrating peptic ulcer. Manges and Baehr (1921) thought that their case was one of suppurative retroperitoneal lymph nodes or perhaps a localized peritonitis in the lesser sac. It would appear that patients with abdominal periarteritis nodosa present with a short history of vague abdominal pain—in our case thought to be due to a peptic ulcer ; they may also have pains in the muscles and joints and a history of sore throat. Eventually the abdominal symptoms become more marked and signs of peritoneal irritation develop, leading to surgical intervention. The patient usually has a high temperature—100° F. (37.8° C.) in our case—and a marked leucocytosis. Logue and Mullins (1946), in reporting 177 cases of periarteritis, list the most prominent symptoms as fever (81%), leucocytosis (73%), albuminuria (65%), abdominal pain (56%), and hypertension (53%). The presence of albuminuria and hypertension depends on involvement of the renal arteries ; in our case there was a raised blood pressure which has remained constant, but no albumin or red blood cells have been found after repeated urinary examination.

Our thanks are due to Mr. J. D. Younghusband and Dr. R. G. Moore for permission to publish this case.

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REFERENCES

Allen, P. D. (1940). *Arch. Surg. (Chicago)*, **40**, 271.
Logue, R. B., and Mullins, F. (1946). *Ann. intern. Med.*, **24**, 11.
Manges, M., and Baehr, G. (1921). *Amer. J. med. Sci.*, **162**, 162.

Operation for Midline Epigastric Incisional Hernia

Although the majority of incisional hernias following midline epigastric incision cause little discomfort and can be supported by a suitable abdominal belt, there are a number with wide divarication of the recti and ballooning of the hernia itself which, because they cause both mental and physical discomfort and in some cases exaggeration of pre-existing chest symptoms, need surgical repair.

Such hernias can, in the main, be prevented by the careful use of unabsorbable suture, but the price is an incidence of stitch sinus which, although varying in the practice of individual surgeons, occurs in a few cases.

For the type of hernia described above I have used the following procedure with unfailing success in some 12 cases.

The scar is excised by an elliptical incision from xiphisternum to umbilicus and the skin on both sides undermined laterally to expose the peritoneum of the sac and the whole of both anterior rectus sheaths to their lateral edges.

The peritoneum is now repaired where it is deficient or weak and the exposed anterior rectus sheaths are dissected off the underlying rectus muscles to form two rectangular flaps, consisting of external and internal oblique aponeurosis, hinged on their medial margins—that is, along the whole lateral margin of each side of the hernial gap. It is important that these flaps should be raised without damage either to the underlying muscle or to the flaps themselves, and that they should include almost the whole width of the sheath. Bleeding, which is usually troublesome, should be dealt with carefully by ligation and suture.

The flaps are now turned over medially on their hinges and sutured with closely placed interrupted sutures of No. 3 plaited silk to the medial edge of the opposite rectus sheath, this being the original but split linea alba forming the hinge of the opposite flap. The security of these sutures is enhanced by folding under the lateral edge of each flap to obtain a double bite. The gap can always be filled in this way with two double-layered aponeurotic flaps—the suture line of each being protected by the intact hinge of its fellow.

The recti, relieved of the lateral pull of the obliques, tend to approximate slightly during the suturing, and this relief of lateral pull can be appreciated later when the repair is healed, when it can be seen that, on straining, the gap tends to close and the remaining deficiency is well controlled by the aponeurotic graft.

The suturing having been completed and haemostasis checked, the skin incision is closed without drainage.

Any subcutaneous serum is aspirated as soon as it forms during the post-operative period ; drainage is avoided, to ensure healing by primary union.

ADDENDUM.—Since submitting this article for publication a description of this operation by Professor Charles Wells has been published (*Ann. roy. Coll. Surg. Engl.*, 1956, **19**, 316).

I thank Sir Heneage Ogilvie for his advice concerning the preparation of this article.

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Reviews

THE LONDON SCHOOL OF TROPICAL MEDICINE

History of the School of Tropical Medicine in London (1899–1949). By Sir Philip Manson-Bahr, C.M.G., D.S.O., M.D., F.R.C.P. (Pp. 328+xiii; illustrated. 50s.) London School of Hygiene and Tropical Medicine (Memoir No. 11). London: H. K. Lewis and Co. Ltd. 1956.

Within the short period of 50 years the tropics have been converted from a white man's grave almost to a health resort. We are told that it used to be said:

> "Beware and betide of the Bight of Benin,
> For few come out, though many go in."

Under the changed conditions, however, a doctor who married a nurse and had three children in Nigeria wrote:

> "The Bight of Benin is no longer in doubt;
> Where two have gone in, now five have come out."

A perusal of this excellent history makes it plain that the London School of Tropical Medicine played a very important part in bringing about this great change. The idea of the school was conceived in the imaginative yet practical mind of Sir Patrick Manson. With the powerful aid of Joseph Chamberlain and Mr. (afterwards Sir) Herbert Read, and the co-operation of the Seamen's Hospital Society, the school was born in a building near the Albert Dock Hospital. Further development took place in the building in Endsleigh Gardens, and it finally entered (in conjunction with the School of Hygiene) into the beautiful building within the curtilage of London University. It triumphed over many difficulties.

The well-produced book in which the story is told comprises four parts. The first tells the plain story in a readable manner; the second gives fascinating short biographies of all those (whether professors, lecturers, technicians, or secretaries) who have played essential parts in the development of the school; the third and final sections give a chronological list of events and an account of the research work and publications of the members of the staff and former students of the school. The whole work is tinctured with wit and lit up by flashes of humour. Some of the quotations at the head of sections and chapters are very appropriate. What could be better than these two lines (from Samuel Johnson) to portray Sir Leonard Rogers?

> "A frame of adamant, a soul of fire;
> No dangers fright him and no labours tire."

I thoroughly enjoyed this book, both for the story it contains and for the many autobiographical interpolations of the author. I take the liberty of quoting one good story. In the old building in Endsleigh Gardens the lecture-room was dark and stuffy. "There was one memorable occasion on one July day when the lecturer was demonstrating a series of statistical tables by means of slides ornamented with yellow, red and blue dots, when he exclaimed to the attendant, 'Turn up the lights and I will talk to them for a bit.' When the light did come on it revealed the whole class of over seventy men, without exception, fast asleep."

One small criticism—there is no index. I should like to add a modern proverb which may be quoted without acknowledgment: "A book without an index is like a country without a map."

ZACHARY COPE.

DISEASES OF THE BREAST

Diseases of the Breast. By C. D. Haagensen, M.D. (Pp. 751 +xviii; illustrated. £5 12s.) Philadelphia and London: W. B. Saunders Company. 1956.

This is the second important work on breast diseases from an American centre in the last year, but it differs from the former in being an account of the experience of a lifetime in dealing with these conditions. The consequences of this personal approach are, on the one hand, that the opinions expressed are backed by a vast experience and acquire great value on that account; on the other hand, there is the disadvantage that alternative views are not given so much prominence nor considered with such objectivity as if the author had not had this almost unique experience. The effect is to make the book an object of study for the experienced surgeon and the expert. It is not, however, to be recommended for general reading, nor was it presumably intended for the undergraduate student.

In the section on anatomy the views of Batson on the significance of the vertebral system of veins in the dissemination of breast cancer are given justifiable prominence, and there is a very full discussion of the important subject of lymphatic drainage. On the other hand, the physiology is not very fully discussed. This attitude is reflected in the somewhat inadequate account of the hormone aspects of the treatment of breast cancer, and shows that the author is primarily concerned with the surgical treatment of this condition. An instance of this is the incorrect statement that the presence of hepatic metastases renders a case unsuitable for treatment by adrenalectomy. The author advocates the American practice of self-examination, and he rightly condemns aspiration biopsy, trephine biopsy, and intra-duct biopsy. He will command almost universal agreement when he says that frozen-section biopsy is not adequate to distinguish between the different types of papillary lesion. Dr. Haagensen is an advocate of scrupulous radical mastectomy with skin-grafting in almost every case. The fact that this operation takes between five and six hours might not recommend it to the British school of surgery, which teaches that, with equal care, as satisfactory an end-result can be achieved in half that time and with a lower morbidity. The author's operation for intra-duct papilloma is not perhaps the most elegant which is now available, but it is a great improvement on the hit-and-miss technique of resection of the block of breast tissue in the region from which the blood is thought to be emanating. In the section on tuberculosis of the breast no mention is made of antibiotic therapy, which has completely altered the prognosis of this condition. The advocacy of radical mastectomy for Paget's disease and for the intra-duct cancers in general must command wide support. Finally, the considerable space devoted to the description of biopsy from the bodies of the vertebrae is once more illustrative of the colour which this book derives from the author's personal interests.

The above comments are criticisms of points of detail, which are inevitable when a book is written by an expert who has explored personally so many controversial issues. Taken as a whole, this book is a monument to the life work of a fine surgeon. Although there may be disagreement on certain particular conclusions, this work is informed by scrupulous care and that thoughtful consideration for the interests of the patient which is the mark of a great doctor all the world over.

HEDLEY ATKINS.

PORPHYRIN BIOSYNTHESIS AND METABOLISM

Ciba Foundation Symposium on Porphyrin Biosynthesis and Metabolism. Editors for the Ciba Foundation: G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Elaine C. P. Millar, A.H.W.C., A.R.I.C. (Pp. 308+xii; illustrated. 30s.) London: J. and A. Churchill Ltd. 1956.

This volume records the proceedings of a symposium on the biosynthesis of porphyrins and porphyrin metabolism held at the Ciba Foundation, London, in February, 1955, under the chairmanship of Professor C. Rimington. The subject was last considered in a Ciba Foundation symposium in 1951, when the volume subsequently published bore the title *Isotopes in Biochemistry.* At that time the incorporation of labelled glycine into the haem of circulating blood and the existence of the amino-laevulinic acid cycle were both appreciated, but many gaps existed in knowledge of the

biosynthesis of porphyrins. Because research since that time has been so fruitful, the scope of the new three-day conference had to be limited to the biosynthesis of porphyrins and of haem, and, apart from experimental porphyria, porphyria diseases had to be excluded.

The conference and the book both fell naturally into four main sections: (1) the early stages in biosynthesis, those involving steps before the pyrrole stage; (2) studies involving porphobilinogen; (3) the general role of porphyrins and the binding of iron; and (4) the use of sedormid and allyl*iso*propylacetamide in inducing derangements of porphyrin metabolism. Although firm evidence is available to link glycine and succinic acid as precursors of β-aminolaevulinic acid, and the latter is clearly an intermediary in the formation of porphobilinogen, the steps between porphobilinogen and protoporphyrin are uncertain, though uroporphyrin and coproporphyrin may both be implicated. The stage at which iron enters in the synthesis of haem, and the mechanism of its incorporation, are still uncertain.

The book is well edited, and makes most interesting reading for those anxious to have in an easily accessible form an account of researches spread widely over the original literature.

F. G. YOUNG.

EYE DISEASES ILLUSTRATED

An Atlas of Diseases of the Eye. Compiled by E. S. Perkins, M.B., F.R.C.S., and Peter Hansell, M.R.C.S., F.R.P.S. Foreword by Sir Stewart Duke-Elder, K.C.V.O., M.A., D.Sc., Ph.D., M.D., F.R.C.S. (Pp. 91+ix; plates in colour and black-and-white. 42s.) London: J. and A. Churchill Ltd. 1957.

An Atlas of Diseases of the Eye, by E. S. Perkins and Peter Hansell, attempts to cover the whole range of diagnosis in ophthalmology. Thirty-two pictures are devoted to the lids and orbit, both in their normal and in their pathological aspects; such common conditions as styes and chalazia and such rare affections as naevus flammeus of the face are shown. Affections of the conjunctiva, cornea, and sclera are represented in 36 further illustrations, and a similar number deal with the uveal tract, the lens, and retrolental fibroplasia. The scope of these is shown by the fact that two plates are devoted to gonioscopy and neoplasms of the anterior uveal tract. The two concluding sections depict appearances of the fundus—32 figures show changes occurring in systemic disease, and 64 changes in more localized disease of the eye: in all 96 illustrations forming a useful atlas of the fundus and its diseases. Throughout the work there is evidence of much thought and care, both in the choice of material and in the drawings prepared; no praise can be too high for the reproduction and printing. The explanatory matter is usefully placed opposite the pictures.

ARNOLD SORSBY.

PHYSIOTHERAPY IN PARAPLEGIA

Physiotherapy in Paraplegia. By Elvira P. G. Hobson, F.C.S.P. Foreword by L. Guttmann, O.B.E., M.D., M.R.C.P. (Pp. 110+ix; illustrated. 12s. 6d.) London: J. and A. Churchill Ltd. 1956.

This book is based on a thesis written for the Fellowship of the Chartered Society of Physiotherapy, and as a thesis is commendable. The modern treatment of the paraplegic is considered in all its aspects, and it is here that the book may disappoint the medical reader. Thus it seems inappropriate for a physiotherapist to attempt to report on the strictly medical and surgical problems, for which she can only repeat uncritically what others have said to her. However, for physiotherapists themselves this book gives a useful account of the methods developed by Dr. Guttmann at Stoke Mandeville Spinal Injuries Centre.

W. RITCHIE RUSSELL.

Bibliography on Hearing (London: Geoffrey Cumberlege, 55s.), prepared by the Psycho-Acoustic Laboratory at Harvard under the direction of S. S. Stevens, is a second and enlarged edition of *A Bibliography on Audition* published in 1950. It lists over 10,000 titles of books and papers, arranged alphabetically by author. Following the main list is a subject classification in two parts: the first is an outline scheme under 315 heads, numbered serially; the second, arranged under the numbers of the scheme, lists the authors who have written on each subject. Such an arrangement is open to criticism. The method of using the classification lists to find entries on a particular subject is tiresome. In the second half of the scheme only the surnames of authors are given, and in the case of such common names as Smith this may entail looking through a great many entries to find a particular paper. There is no indication if an author has written more than one paper on a particular subject or if two authors of the same surname have both written papers on it. Considerations of space and printing costs have no doubt dictated the present arrangement; a subject bibliography with an author index would have been more usable. Even so *Bibliography on Hearing* is a valuable work of reference covering all aspects of otology.

The *Annual Review of Medicine* (Vol. 7, 1956) continues to give expert evaluations of progress in a variety of medical and surgical specialties. Although designed primarily for clinical investigators and teachers, it also provides a valuable refresher course for the general and specialist practitioner. It concludes as usual with an exhaustive bibliography of reviews in medicine which have appeared during the past year. It is published by Annual Reviews, Inc., Stanford, California, price $7.50.

The 58th edition of *Scientific and Learned Societies of Great Britain* (George Allen and Unwin Ltd., 1956, pp. 212, 35s.) brings this valuable reference book up to date once again; the last edition appeared in 1951. Its aim is to include, in classified order, details of all those societies which give educational facilities and/or publish papers or other original material. In the new edition a larger number of societies has been compressed into less space by abolishing the geographical subdivisions and sometimes by omitting names of officers. The price seems high for so small a volume.

Looking back over a varied life of doctoring at home and abroad, Dr. C. V. Nicoll has a number of good stories to tell about medical men, politicians, and others in his book *From a Doctor's Diary* (Wilding, 15s.). Samuel Gee, who was teaching at Bart's when the author was a student there, thought that tobacco smoking was unhealthy and that business men ate and drank too much—traditions alive and kicking to-day. A fellow-student of the author's will arouse the admiration of many for having taken exception to a hectoring examiner and told him he was unfit for the job. However, he apparently had to go elsewhere for his qualifications.

Lecture Notes on the Use of the Microscope, by Dr. R. Barer, is an excellent little book for anyone to study when he first begins to use a microscope. It will also be instructive to the slightly more advanced worker who wants to learn the advantages of Köhler illumination for critical work and how to set up his apparatus to obtain it. The author's elementary account of the optics of microscopes is so designed as to be of use in practice at the bench. The book is published by Blackwell Scientific Publications at 7s. 6d.

The well-known textbook, *Law Relating to Hospitals and Kindred Institutions*, by S. R. Speller, LL.B., has now reached its third edition (1956). Since the Health Service began a number of cases contested in the courts have resulted in alterations to the law. Consequently the author has made a considerable number of changes in his book to keep it up to date. So that it shall not become too unwieldy, he has reduced the text on the Public Health Acts. The book is published by H. K. Lewis Ltd. for 70s.

A group of distinguished contributors have combined in *Progress in Clinical Medicine* (3rd edition) to set out in a practical, didactic style modern views on diagnosis and treatment in many fields of medicine. The subjects covered include infections, diabetes, rheumatism, and diseases of the alimentary, cardiovascular, renal, haemopoietic, respiratory, neurological, and endocrine systems; old people, metabolic disorders, and radio-isotopes come in for special chapters. Edited by Drs. Raymond Daley and Henry Miller, the book is published by J. and A. Churchill Ltd. for 40s.

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THE CONSTITUTION OF THE B.M.A.

The Representative Body set up in 1953 a Constitution Committee "to examine and report on the present structure of the Association, with special reference to the reorganization of the Representative Body." The report of the Committee is published in this week's *Supplement* and will be the subject of a whole day's debate when the Representative Body meets at Newcastle in July. Mr. H. H. Langston, the Chairman, and his Committee have put the Association in their debt by their painstaking and thorough analysis of the present situation, by the fairness with which they have put the arguments for and against proposals for reform, and by the cogency with which they propose changes in the constitution which will go some way towards meeting the criticisms which have been voiced since the end of the war, and especially since 1948. Many felt that a constitution adapted to the conditions of 1902 would be unlikely to meet the greatly changed conditions of to-day. In particular the Representative Body has grown to such a size as to lead Mr. Langston's Division in Winchester to describe, a few years ago, its meetings "as a shambles—too many members discussing too many resolutions." There have been occasions when on the last day of the meeting important matters had to be hustled through with a haste that allowed hardly any time for discussion. The numbers of the Representative Body rose with the increase in membership of the B.M.A., which grew with but faster than the increase in the numbers of doctors practising in Britain. In 1938 the Representative Body numbered 366 and in 1956 it numbered 500. Can a body this size—the annual Parliament of the B.M.A.—effectively deal with the business of the Association during the four days it meets every year? And the business is no less than that of determining the policy of the B.M.A. The Constitution Committee recommends that the Representative Body should be reduced in number from 500 to 350. The question to be answered is, Will 350 men and women be wiser than 500?, or, at least, be better able to concentrate on the matters at issue? There would certainly be 150 fewer with a potential right to speak. A more practical question is the difficulty of finding a large enough meeting-place in the different cities of Britain. A more contentious question is that the Representative Body is composed so predominantly of general practitioners that the policy of the Association is determined largely by their interests. The consultants and specialists in particular are uneasy about this. They feel themselves to be, and are, in a minority at a Representative Meeting, and are therefore dependent upon a vote of general practitioners to secure the policies they wish the Association to adopt. The B.M.A.'s constitution is based on a "federation of geographical units rather than an alliance of craft groups," as the Committee puts it, and the Committee sees no reason to change this, but stresses that a Division "should be large enough to include in its membership all the main fields of medical practice." It has taken an important step by recommending that the Central Consultants and Specialists Committee should elect four members of the Representative Body, important because the Committee thus outwardly does something towards meeting a grievance which undoubtedly exists. It notes in its report that at the Glasgow meeting, for example, there were 75 consultant members of the Representative Body as compared with 281 general practitioners.

If consultants and specialists still feel anxious about their position in the constitution of the B.M.A. they should feel encouraged by the Committee's proposals for the reconstruction of the Branches of the Association. It recommends that "the Branches shall be reorganized on a basis corresponding in the main with the areas of the Regional Hospital Boards." In this way hospital staffs will find a B.M.A. focus for their interests and a unit large enough to embrace them effectively. The Branch Council will be able to co-ordinate the opinions of all sections of the profession in its area, and the Divisions and the Regional Consultants Committees will have a common meeting-place for discussion and a common instrument for formulating policy. The Branch Council, the Committee states, "should contain in its membership representatives of all the organized bodies in its area, and so be able to speak with authority on behalf of the profession as a whole." What stands out in this proposal is that it would lead to the establishment of a much closer relationship between hospital staffs and the Association and thus go a long way towards removing the criticism, untenable though it is, that the Association is principally concerned with the welfare and interests of general practitioners. The Committee

does not recommend any change in the present constitution of the Central Council of the B.M.A., consisting of 77 members, of whom 40 members are elected by Branches in Great Britain and Northern Ireland grouped for the purpose. But the proposed reorganization of the Branches, if carried through, might have as one result an increased representation of consultants in the Council.

There is space here to touch upon only a few outstanding matters in a report of remarkable interest. Among others there is the recommendation that a second scientific meeting should be held in the winter, a reminder of the fact that one of the principal aims of the B.M.A. is to promote the medical and allied sciences. It is much to be hoped that members will read and re-read the Constitution Committee's report in this week's *Supplement*. It is the thoughtful product of much hard work. It shows that the B.M.A. is a live organization, alert to its responsibilities in a rapidly changing world. Its publication now, well in advance of the Annual Meeting, gives Divisions ample time to study it and their Representatives the opportunity to join in the debate at Newcastle with prepared minds. Much will depend upon the decisions the Representative Body takes, because it will be laying down the pattern for the future.

MEETING THE NEW MINISTER

A delegation from the Negotiating Committee met the Minister of Health, Mr. D. F. Vosper, on Wednesday this week, and at the time of writing we are ignorant of the results of the meeting. The new Minister has taken office at a time when the profession is deeply disturbed about its relations with the Government and about the conditions in which it works in Britain's National Health Service. With little time in which to grasp the intricacies of the situation facing him Mr. Vosper will have had to lean heavily on the advice of his civil servants; and almost immediately on his appointment he was invited to attend a meeting of the Cabinet. In these circumstances he will inevitably be the spokesman of others, and what he says on the immediate issue of remuneration will be said on the authority of the Cabinet. Whatever the reactions of the profession to this, it will no doubt be fair-minded in its attitude to Mr. Vosper himself at the beginning of his tenure of an office to which many have been called but in which few have chosen to remain.

This week will show whether Mr. Vosper is to adopt the same negative attitude as his predecessors to the medical profession's claim that its remuneration must continue to be based on the recommendations of the two Spens Committees. It is now being said that the Spens formula is unrealistic and that something new and more flexible must be sought. What at present seems to be inflexible is the Government's attitude to its moral obligation to act on a promise. We do not recall that when the Conservative Party was in opposition in 1948 it raised even one voice against the "unrealistic" nature of the Spens reports. And if the Government to-day tries to evade the issue by calling for a new formula—a more flexible formula—what confidence will the profession have in it in view of the way the Government has treated it since July, 1948? During the past several months our negotiators have patiently asked for a reasonable examination of their case, and have for their pains been fobbed off with a cursory dismissal of it. One result of this has been to bring to the surface a volume of frustration and discontent with many other things than the amount of pay for work done. If—as some people are suggesting—the Spens formula is not flexible enough, neither is the Health Service itself. Doctors feel themselves cased in a rigid structure which inhibits initiative and creative activity.

Basing their claim on the Spens formula, our negotiators have asked for an increase of 24% in the remuneration of those working in the Health Service. If this is rejected the various elements in the Negotiating Committee—we understand—will report back to their constituents. If this is to be done it is hoped that it will be done quickly, so that concerted and united decisions and action may be taken without too much delay. The crisis now facing the profession is for the whole of the profession and not just any one section of it. It must remain united in its collective responsibility not only for its several parts to-day but for the profession of to-morrow.

Many correspondents to this *Journal* rightly insist that the first question to be settled is the present claim for increase of pay in accordance with the Spens recommendations. If the Government refuses to admit their validity, then the relations between it and the profession will be at breaking point. It will have precipitated a crisis that will be of its own making, a crisis of confidence, as it has been aptly called. The present mood of the profession is shown unmistakably by the many resolutions from different parts of the country calling for withdrawal from the N.H.S. if no satisfaction is given. Short of this, a demand might be made for arbitration, a time-honoured method of settling disputes between two groups of people each of which believes it has reason on its side.

GESTATION AND SEX

The idea that the time in the menstrual cycle when intercourse takes place might have some influence on the sex of the child is not a new one.[1] There has been no direct support for this hypothesis, however, and attempts to examine it on experimental animals have given conflicting results.[2–5] Indirect evidence which may have a bearing on the matter has recently been obtained by T. McKeown and B. MacMahon[6] in an investigation of sex differences in length of gestation of mammals. Their starting-point was the well-established fact that the period of gestation is slightly longer for girls than for boys, and their own observation that the proportion of male children decreases as the period of gestation increases. The relationship was not the same in all the mammals examined. Pregnancy was longer for males than for females in the cow, horse, and possibly the sheep, and appeared to be longer for females than for males in the guinea-pig as well as in man. In commenting on these observations McKeown and MacMahon focused attention on the data for man and the cow, species in which the interpretation is somewhat simplified by the fact that only one foetus is usually present. They suggest that in the cow the most likely explanation of the longer gestation of males is that the proportion of males conceived is higher if mating takes place early in heat; this is to say that in relation to time of ovulation—which occurs after the end of heat in the cow—it is the date of mating which is early and not the date of birth which is late. At first sight this possibility would appear to be ruled out in the case of man, since the sex difference in duration of pregnancy is probably attributable to a difference in foetal weight; second-born females and first-born males are of approximately the same birth weight, and are delivered after about the same period of gestation. But in cattle gestation is dated from mating, whereas in man it is dated from onset of menstruation, and hence provides no information about the time of mating in the cycle. In short, the observations on the cow suggest that sex of offspring may be related to time of mating, whereas the human data are wholly, and inevitably, inconclusive.

This conclusion is necessarily cautious. McKeown[7] has noted that, if the sex of the child is related to the time in the menstrual cycle when intercourse occurs, it might explain some of the anomalies of the human sex ratio at birth. There has never been a satisfactory explanation of the fact that the proportion of male births decreases slightly as parental age increases, and that the proportion appears to increase during war. Both observations might be accounted for if the proportion of males conceived is higher in pre-ovulatory than in post-ovulatory matings, since an increase in the frequency of matings would probably tend to increase the proportion of early fertilizations and to raise the sex ratio. In this context the decline in the proportion of male births with increasing parental age is of particular interest. It has never been clear whether the change is associated primarily with age of mother or with age of father, and it is so small that large numbers of observations are required to separate the two influences. A recent report by E. Novitski and L. Sandler,[8] based on all births of white children in the United States in the years 1947–52, suggests that the age of the father is more important than the age of the mother. If this is true the age trend cannot be attributed mainly to a maternal influence—such as a sex difference in the incidence of abortion—but must also be due to something associated with the father's age. Variation in the relative frequencies of production of X- and Y-bearing sperm is well established in some animals, and is the explanation suggested by Novitski and Sandler. But if time of intercourse in the cycle has an effect upon sex of offspring the slight decline in the proportion of male children with increasing paternal age might result from a decline in the frequency of intercourse rather than from a change in the relative viability or frequency of the two types of sperm.

1. Thury, M., *Mémoire sur la loie de production des sexes chez les plantes, les animaux et l'homme*, 1863, Geneva.
2. Pearl, R., and Parshley, H. M., *Biol. Bull.*, 1913, **24**, 205.
3. —— *Maine agric. exp. St. Bull.*, 1917, **261**, 130.
4. Cooley, C. L., and Slonaker, J. R., *Amer. J. Physiol.*, 1925, **72**, 595.
5. Hart, D., and Moody, J. D., *Ann. Surg.*, 1949, **129**, 550.
6. McKeown, T., and MacMahon, B., *J. Endocr.*, 1956, **13**, 309.
7. —— *First International Conference of Human Genetics*, 1956.
8. Novitski, E., and Sandler, L., *Ann. hum. Genet.*, 1956, **21**, 123.

OXYGENATION IN RADIOTHERAPY

Cellular damage from exposure to *x* rays is believed to be caused by two different processes—first, by direct "hits" by the ionizing particles on the chromosomes, and, secondly, by ionization of the water contained in the cell with the production of very short-lived oxidizing radicals which inactivate the cellular enzymes and may lead to cell death.[1] The formation of these oxidizing radicals is appreciably increased in the presence of oxygen. The proportion of the cellular damage which can be ascribed to each of these processes is not known, but recent radiobiological research culminating in the work of L. H. Gray and his colleagues[2] has suggested that the latter is at least as important as the former, if not more so. They showed that the sensitivity of many different types of plant and animal cells to damage by *x* rays may be reduced, both *in vivo* and *in vitro*, by as much as two-thirds if they are deprived of their normal oxygen supply, but will not be greatly increased in the

presence of excess oxygen. In man the normal environment of most cells contains oxygen at a tension of about 35 mm. Hg, and a rise in the tension will not greatly affect the radiosensitivity; similarly, normally oxygenated tumour cells will not be made much more radiosensitive by increasing the oxygen tension. Many tumours, however, contain large numbers of cells which, because of poor blood supply, exist under almost anoxic conditions.[3] It is believed that these poorly oxygenated cells may survive such doses of irradiation as may safely be given to patients, but that if the oxygen tension to which they are subjected were raised to somewhere in the normal range they might become much more sensitive.

In 1954 K. A. Hultborn and A. Forssberg[4] described four cases of skin tumours in which the concomitant inhalation of oxygen at atmospheric pressure appeared macroscopically to have amplified the effect of irradiation. In the following year I. Churchill-Davidson, C. Sanger, and R. H. Thomlinson[5 6] reported the results of a preliminary investigation into the effects of irradiating carcinomas in patients breathing oxygen at a pressure of three atmospheres absolute (30 lb. per square inch (2.1 kg. per square cm.) gauge pressure). To obtain results quickly they tried to determine whether the expected increase in radiosensitivity was demonstrable histologically. To do this they treated patients with carcinomas large enough to be divided into two fields for irradiation. One field was irradiated with the patient breathing air at atmospheric pressure and the other with the patient breathing oxygen at three atmospheres in a pressure chamber. Each field was irradiated once only with the same dose of *x* rays. To compare the effect on the two fields a dose was given which was considered insufficient to kill all the cells. After an interval a biopsy specimen was taken from each field, or the growth was excised, and the pathologist was told where the dividing line between the fields lay but not which field was irradiated in oxygen. Eight patients were treated—four had carcinomas of the lung and four carcinomas of the breast (two were local recurrences after mastectomy). The results were encouraging in that the tissue which the pathologist reported as more damaged was in six cases out of the eight that irradiated in oxygen. This was also probably true in the seventh case, but the conditions of the experiment were not fulfilled, the pathologist having been told, because of some misunderstanding about the dividing line, which tissue was which. In the eighth case no distinction could be made because none of the tumour cells in either field had survived.

At the annual congress of the British Institute of Radiology last December, Churchill-Davidson and his colleagues presented the results of treatment of a further thirty-five patients, who had been given potentially curative doses of *x* rays to the whole tumour while breathing oxygen at three atmospheres—the criterion for their selection being that they should, either owing to the tumour's extent or histology, be considered to have little chance of cure by conventional radiotherapy. The apparatus and technique, though experimental, had proved satisfactory and no mishap or immediate complication attributable to the treatments had occurred. The authors stated that, although the results could be regarded only as a preliminary assessment because of the short time which had elapsed since many of the patients had been treated, the initial response of the tumours had in most cases been very much better than would otherwise have been expected in their experience. Nevertheless, they believed that several years' work would be necessary before a final appraisal could be made. The work of P. Howard-Flanders and E. A. Wright[7] suggests that the addition of oxygen might increase the incidence of radionecrosis of bone and cartilage because of the normally poor oxygenation of these tissues. It is hoped that this difficulty will be overcome by the use of higher energy irradiation, since this is less absorbed in bone and cartilage.

[1] Gray, L. H., *Brit. J. Radiol.*, 1953, **26**, 609.
[2] — — Conger, A. D., Ebert, M., Hornsey, S., and Scott, O. C. A., ibid., 1953, **26**, 638.
[3] Thomlinson, R. H., and Gray, L. H., *Brit. J. Cancer*, 1955, **9**, 539.
[4] Hultborn, K. A., and Forssberg, A., *Acta Radiol. (Stockh.)*, 1954, **42**, 475.
[5] Churchill-Davidson, I., Sanger, C., and Thomlinson, R. H., *Lancet*, 1955, **1**, 1091.
[6] Sanger, C., Churchill-Davidson, I., and Thomlinson, R. H., *Brit. J. Anaesth.*, 1955, **27**, 436.
[7] Howard-Flanders, P., and Wright, E. A., *Nature (Lond.)*, 1955, **175**, 428.

UNSETTLED CHILDREN

The concept of maladjustment in children is so loosely defined that its frequency must necessarily be uncertain. Recent estimates in Somerset, Birmingham, and Berkshire, as reported by the Committee on Maladjusted Children,[1] vary between 5.4% and 11.8% of schoolchildren. This committee, though it embraced a wide definition of maladjustment, seemed to be considering it primarily in relation to child-guidance clinics, paying little attention to children, for example, whose maladjustment brings them before juvenile courts, and encouraging what may be regarded as an undesirable differentiation between the needs of maladjusted and of delinquent children. At least until a year ago 23 counties and 26 county boroughs had no child-guidance clinics, and even if the lowest estimates are accepted existing clinics can hardly be expected to cope with the maladjusted children of their locality.

D. H. Stott, whose previous writings have mainly been concerned with delinquency, has now published a book with the apt title *Unsettled Children and their Families*,[2] which is directed towards relieving the burden on child-guidance clinics and encouraging teachers and parents to deal more confidently and at an earlier stage with a proportion of their difficult children. He sets out to establish which of the common parental inadequacies matter little or much, to show in detail the kinds of family weakness which give rise to delinquency and to other unsettled behaviour. He lists half a dozen patterns of unsettled behaviour—overdemandingness, withdrawal, depression, and so on—and follows with a dozen "breakdown-producing" family patterns. He has as aids to diagnosis "adjustment pointers," "native-wit schedules," "life-history charts," and "diagnostic

[1] Ministry of Education, *Report of the Committee on Maladjusted Children*, 1955, H.M.S.O., London.
[2] Stott, D. H., *Unsettled Children and their Families*, 1956, London.

summary sheets"—all of which are to be used by those who are professionally concerned with children but have no formal training in clinical work. He also elaborates ten syndromes of parent–child attitudes, linking up observed behaviour with its meaning for the child. Some readers may think Dr. Stott oversimplifies the problem; he scarcely mentions previous classical work, and he makes some rash statements and alarming excursions into unknown territory. For him "all basic anxieties in children relate to some threat, real or imagined, to membership of the family group." Clinical interviews and the whole body of psychotherapy, individual and group, are rejected. Intelligence tests in clinics should be abandoned entirely. "Depressive reactions" and "irritable, intolerant states" suggest "neurophysical exhaustion" and should be treated by physical rest; even "some of the outbreaks and fits which are now thought to be epileptic" should be treated by "systematic rest-therapy." Enuresis should be looked upon as a "strain illness" of the same order as "infective illnesses of bronchi, ear, nose," and included in the same group are "bad co-ordination and other spastic conditions . . . fits, bad turns."

Nevertheless, there are some useful lessons to be learned from this book. It is probable that teachers and other understanding people, perhaps even parents, could effectively help a far larger proportion of those unsettled children now being sent to child-guidance clinics. In doing so their main need is not a high degree of psychological sophistication but the ability to step outside their immediate relationship with the child and to view the situation objectively. It will not matter very much whether they follow Dr. Stott or the many other authorities who have written on parent–child reaction patterns, so long as they realize that patterns exist, and that each child needs careful observation and assessment in relation to its family. A further point, which should appeal to general practitioners, is that by a confident bearing, a simple, perhaps empirical, prescription, and the prevention of further damage through panic action while Nature completes the cure, a doctor may often be of the greatest help to his patient; and so it undoubtedly often could be with disturbed children. There is surely a need for the child psychiatrist to emerge more frequently from his clinic, in order to help enlightened teachers and social workers to undertake as much of the treatment of unsettled children as possible; and the psychiatrist will have to play the major part in effecting that enlightenment.

EMERGENCY OBSTETRIC SERVICE

Flying squads to give emergency obstetric treatment are now based on 172 maternity hospitals or units in England and Wales. They receive about 3,000 calls per year, or, expressed in another way, their assistance is sought in 10 out of every 1,000 domiciliary deliveries. About three-quarters of the calls are for complications arising during the third stage of labour, but among the other emergencies flying squads are being called on to treat are abortion, antepartum haemorrhage, eclampsia, prolonged labour, undiagnosed malpresentations, multiple pregnancies, prolapse of the cord, and acute inversion of the uterus. Elsewhere in this issue (p. 455) we report the twenty-first birthday celebrations of the emergency obstetric service at Newcastle upon Tyne, which answered its first call on October 15, 1935, and is thus one of the oldest units in the country. Before the setting up of this service in Newcastle investigations had shown that, while some maternal deaths arose from failure to refer complicated cases to hospital, some women lost their lives as a consequence of their transportation to hospital. This was especially true of patients with the third-stage complications of haemorrhage, retained placenta, and shock—and it was to this group that the obstetric emergency service was primarily directed. An excellent account[1] of the work of the Newcastle service was published in this *Journal* some years ago. In that area it has always been the practice to send out an experienced obstetrician as a member of the team, and this good example has for the most part been followed in other parts of the country. More recently it has been found that invaluable help can often be given by a specialist anaesthetist. In the early days of flying squads there was a fear that obstetricians might be forced by the circumstances of the case "to perform operations at home that would have a wider margin of safety in hospital"[2]; but according to London experience this fear proved without foundation.[3]

Though the country is reasonably well served by obstetric emergency services, long distances have to be covered by the flying squads in some regions, with inevitable delay in the treatment of the patient. Consequently the alternative suggestion has been made of distributing emergency equipment among doctors, district midwives, cottage hospitals, or maternity homes—and actually put into effect in the Winchester group of hospitals. Such arrangements will enable transfusion to be given while the flying squad is *en route*.

With the great reduction of puerperal sepsis, the commonest causes of maternal mortality and morbidity are the toxaemias and haemorrhages. Improved antenatal care and selection of cases for hospital can further reduce maternal mortality and relieve the flying squads of some of their most anxious problems. Early diagnosis and treatment of anaemia, the early detection of pre-eclampsia and hypertension, fuller investigation of the "high head" in relation to placenta praevia before bleeding, immediate admittance to hospital (without internal examination) of every case of bleeding, however slight—all these will make their contribution. So long as domiciliary delivery continues, however, there will be need for efficient service of flying squads. Since the midwife alone attends many patients in need of emergency treatment it would seem reasonable that she should be permitted to summon the service herself in extreme emergency when she is unable to obtain immediate help from the patient's practitioner. Finally, so that full advantage may be taken of the service, executive councils and medical officers of health should keep general practitioners and domiciliary midwives informed

[1] Stabler, F., *British Medical Journal*, 1947, 2, 878.
[2] Mills, W. G., ibid., 1947, 2, 1056.
[3] Fairfield, Letitia, ibid., 1948, 1, 1204.

about the location of the flying squads and the method of summoning them to an emergency.

PHYSIOLOGICAL FUNCTIONS OF ZINC

In 1940 D. Keilin and T. Mann claimed to have demonstrated for the first time the physiological function of zinc in organisms.[1] They showed it to be the active part in the molecule of the enzyme carbonic anhydrase. Later workers have shown that this was in fact only the first clue to the varied activities of this widely distributed element. The average human dietary uptake of zinc is 10–15 mg. a day.[2] A similar amount is excreted in the faeces. Urinary output is relatively insignificant in health. Some patients with albuminuria have been shown to lose more in their urine and to have a negative zinc balance.[2] Young male rats fed on a zinc-depleted diet show retarded growth, loss of fur,[3] and failure of genital development,[4] but no deficiency syndrome has been recognized in man. These changes may all be secondary to pituitary hypoplasia. Pigs have a relatively high requirement of zinc, and if it is not supplied they develop dermatitis.[5]

Most human organs contain 40 to 200 μg. of the metal per gramme of dry weight.[6] Normal prostate has been shown to contain about 700 μg. and spermatozoa about 2,000 μg. per gramme.[7] Several groups of workers have reported that malignant tissues may differ from normal tissues in their zinc content.[8–10] Zinc has been found not only in carbonic anhydrase but also in uricase[11] and in alkaline phosphatase.[12] In recent years B. L. Vallee and his colleagues at Harvard have shown it to be a component of a number of dehydrogenases. By means of statistical methods they related their findings to some important clinical conditions. They showed[13] that the level of zinc in the serum is reduced in patients with liver cirrhosis of Laennec type, and that this reduction is quantitatively related to the severity of the disease. In two patients who improved clinically under treatment the serum levels of zinc returned to the normal range. Eight patients with infectious hepatitis had normal serum levels of zinc. Hepatic alcohol dehydrogenase and glutamic dehydrogenase, which catalyses the release of ammonia from glutamic acid, are both zinc enzymes. Most of these writers' patients were alcoholics, and accumulation of ammonia is considered to be related to hepatic coma.[14] Consequently their findings give rise to some interesting speculations. In another paper[15] the Harvard workers show that zinc levels in the serum fall and that the activity of lactic and malic dehydrogenase in the serum increases after myocardial infarction. Some patients with signs of coronary artery disease but none of infarction had normal lactic dehydrogenase activity in the serum. Lactic dehydrogenase certainly and malic dehydrogenase possibly contain zinc; both are related to the liver dehydrogenases. Further work is clearly required to see whether these changes occur in clinically similar conditions.

[1] Keilin, D., and Mann, T., *Biochem. J.*, 1940, **34**, 1163.
[2] McCance, R. A., and Widdowson, E. M., ibid., 1942, **36**, 692.
[3] Todd, W. R., Elvehjem, C. A., and Hart, E. B., *Amer. J. Physiol.*, 1934, **107**, 146.
[4] Elcoate, P. V., Fischer, M. I., Mawson, C. A., and Millar, M. J., *J. Physiol.*, 1955, **129**, 53P.
[5] Tucker, H. F., and Salmon, W. D., *Proc. Soc. exp. Biol. (N.Y.)*, 1955, **88**, 613.
[6] Eggleton, W. G. E., *Biochem. J.*, 1940, **34**, 991.
[7] Mawson, C. A., and Fischer, M. I., ibid., 1953, **55**, 696.
[8] Cowdrey, E. V., Carruthers, C., and Suntzeff, V., *J. nat. Cancer Inst.*, 1948, **8**, 209.
[9] Heath, J. C., *Nature*, Lond., 1949, **164**, 1055.
[10] Daniel, O., Haddad, F., Prout, G., and Whitmore, W. F., *Brit. J. Urol.*, 1956, **28**, 271.
[11] Holmberg, C. G., *Biochem. J.*, 1939, **33**, 1901.
[12] Cloetens, R., *Biochem. Z.*, 1941, **310**, 42.
[13] Vallee, B. L., Wacker, W. E. C., Bartholomay, A. F., and Robin, E. D., *New Engl. J. Med.*, 1956, **255**, 403.
[14] Sherlock, S., Summerskill, W. H. J., White, L. P., and Phear, E. A., *Lancet*, 1954, **2**, 453.
[15] Wacker, W. E. C., Ulmer, D. D., and Vallee, B. L., *New Engl. J. Med.*, 1956, **255**, 449.

INTELLIGENCE AND CLEFT PALATE

The intelligence of children with congenital malformations, apart from those such as mongolism in which the brain is directly affected, has been little investigated. There is a clinical impression that mental defect is more common in some instances, but few direct measurements have been made. Professor R. S. Illingworth and Dr. L. B. Birch,[1] of Sheffield, recently made a survey of children with cleft palate all treated by the same plastic surgeon, Mr. Hynes. There were 112 in the original sample who had reached the age of 4 years. Of these, 54 had hare lip and cleft palate and 58 the genetically distinct condition of cleft palate alone. The authors were able to test 61 of these children, 19 were tested by the local authorities, and 17 were not tested but school reports were available for them. No information was to be had on 15, of whom 2 had died. The Terman–Merrill test was used both by Illingworth and Birch and by the local authorities. The mean I.Q. was found to be 95.4, which was significantly different from the assumed mean of 100. Unfortunately no figures were available for the normal test score in Sheffield, and large regional variations in mean intelligence test score are known to exist.[2] However, of the 80 tested, 3 had an I.Q. below 50, 5 had an I.Q. between 50 and 70, and there were 5 with an I.Q. of over 120. No difference was found between the group with hare lip as well as cleft palate and those with cleft palate alone. The 17 on whom only school reports were available appeared if anything rather less intelligent than the main group.

This evidence that there is a tendency for children with cleft palate to be below average intelligence is borne out by P. Fogh-Andersen's finding in Denmark that 59 instead of an expected 20 children with hare lip and cleft palate were present among 17,000 mentally defective children.[3] Illingworth and Birch put forward two possible explanations of their finding. One is that the lower intelligence is due to the same factors, genetic and environmental, as are responsible for the malformation. The other is that there will have been a tendency for independent genetic factors for the deformity and dull intellect to have become associated in the lower strata of society. This second theory, which the authors prefer, is perhaps less probable, since there appears, for example in Fogh-Andersen's Danish study, to be no tendency for the two malformations to be more common in the lower social strata.

[1] Illingworth, R. S., and Birch, L. B., *Arch. Dis. Childh.*, 1956, **31**, 300.
[2] Vernon, P. E., *Eugen. Rev.*, 1951, **43**, 125.
[3] Fogh-Andersen, P., *Inheritance of Hare Lip and Cleft Palate* Copenhagen, 1943.

ROYAL COLLEGE OF SURGEONS

HUNTERIAN FESTIVAL

As in previous years the Hunterian Oration at the Royal College of Surgeons, Lincoln's Inn Fields, on St. Valentine's Day was followed by the Hunterian Festival Dinner with the President of the College, Sir HARRY PLATT, in the Chair.

The toast of "The College" was proposed by Sir ALBERT RICHARDSON, a past president of the Royal Academy of Arts, who in his speech stressed the importance of anatomy both in art and in the more intimate mystery of surgery. Hunter, he reminded his audience, was not only a great anatomist, but he was also a patron of the arts—he collected good pictures and kept many academicians from starving. He recommended them to do likewise. They had already shown that they had leanings that way in their patronage of an architect and their regard for good pictures, but modern art, he thought, would have to go back again and study anatomy, and the same applied to architecture. He welcomed the association between the arts and the great profession of surgery.

The President on the Rebuilding of the College

The President, Sir HARRY PLATT, who responded to the toast, reviewed the progress made towards the rebuilding of the College. The Nuffield College was now, he said, a heritage, a new heritage for the twentieth century for the College of Surgeons. They had also to record with deep gratitude a number of benefactions. The Wellcome Trustees, whose generous gift of £100,000 had made possible the construction of the beautiful museum which lay above the Great Hall, had given them an additional sum of £35,000 to cover unforeseen costs already incurred in the first stage of their rebuilding programme which had been completed three years ago. Mr. Edward Lumley's gift of £35,000 was no longer shrouded in anonymity, and they thanked him for his support and continuing interest in the affairs of the College. They had also received in the past few months tangible recognition of the great interest shown by leaders of industry in the importance of the College to the nation.

So far he had only spoken of the buildings of the College as an appropriate response to the toast, but their research and teaching activities had inspired new support on a most generous scale. The boards of their two faculties, dental surgery and anaesthetics, had placed research in the forefront of their new activities and ambitions. Of the two, the research department of anaesthetics, already generously endowed, was launched on its career in spacious quarters on the top of the Nuffield College.

Research in the older scientific departments of the College, long established and increasingly expanding, should not have its growing needs overlooked. Their programme of teaching drew students from all parts of the world and they had already outgrown the accommodation in the old College and in the new Wellcome Museum floors. Two years ago, when he had reported on the state of the College, they were looking with confidence beyond the completion of the Nuffield College to the final stage of the restoration and rebuilding of the College—to phase three of the scheme. The first stage of phase three had been designed to provide for extensions to the departments of anatomy and physiology, the new research department in dental science, and new accommodation for the department of research in ophthalmology. The second stage was to give a much-needed lecture room for teaching departments at present housed temporarily in the Examination Hall in Queen's Square, and, finally, a new Hunterian Museum to display the great collection committed to the care of the College by the nation under the leadership of William Pitt 150 years ago.

Two years ago they saw the new buildings clearly. Their hopes then were high, but they had been brought face to face with hard facts. Phase 3a would be completed by September, but as a shell only, and there they would be compelled to halt—a breathing-space only, they trusted—until the nation came to realize that the world-wide prestige of British surgical science demanded that the College be restored, extended, and maintained in order that it might fulfil its manifest destination as an academy of surgery, international in its influence and achievements.

Hunterian Oration

Earlier in the day Sir ERNEST FINCH, of Sheffield, had delivered the 89th Hunterian Oration, taking as his subject "The Influence of the Hunters on Medical Education." Both William Hunter and his brother John had been teachers, he said. Coming to London in 1741, William entered St. George's Hospital as a surgeon's pupil. Of his early training he said he had learned much by his ears and almost nothing by his eyes, and therefore nothing to the purpose. His ability to teach was obvious, and by 1746 he was giving anatomy classes and advocating the establishment of a museum of anatomy and surgery for London. John Hunter joined his brother in 1748. During the subsequent years the brothers taught anatomy and conducted research to such good purpose that their school became famous and attracted pupils from all over England and the Colonies. Those pupils, in many cases, returning to their native towns carried with them such a respect for the methods of the Hunters that they became responsible for the founding of similar medical schools. Thus the College at Philadelphia had been founded, the New York Hospital, and the Medical Faculty in Pennsylvania. In Great Britain, Manchester, Edinburgh, Glasgow, and Leeds became centres of training in the same way.

What was it that had so influenced the Hunters' pupils, and made the Hunters such pre-eminent teachers? Teaching by example rather than precept seemed to have been their guiding principle: throughout their lives both Hunters continually urged that practising surgeons should also teach. John Hunter particularly impressed on his pupils the importance of observation and experiment.

John Hunter himself had practically no formal education at school—what we would now call "general education." This made one ponder on the effects of trying to force people into a common mould. Indeed, the heart attack which caused Hunter's death was brought on by his vigorous protests about the advisability of his teaching two would-be pupils whose education fell short of official requirements. At the present time educational standards were governed by examination, and that had resulted in competition between the universities and other licensing bodies. The time seemed opportune for a reconsideration of John Hunter's contribution to medical education. In the lectures attributed to him he seemed to present his students with a fully integrated subject. With the growth of natural science, subjects now tended to be presented independently of each other. It was for the universities to restore their integration.

THE NEWCASTLE FLYING SQUAD

TWENTY-FIRST BIRTHDAY CELEBRATION

The Newcastle Flying Squad—or more correctly the Newcastle Obstetric Emergency Service—celebrated its twenty-first birthday by a party on February 21. A pioneer of such services in Britain, the squad answered its first call in October, 1935. Since then it has responded to 1,377 urgent calls, the peak being in 1955, when 146 calls were received. The party, given by the Governors of the United Newcastle upon Tyne Hospitals, was held at the Princess Mary Maternity Hospital, the squad's base. The opportunity was taken to honour Professor E. FARQUHAR MURRAY, formerly professor of midwifery and gynaecology at Newcastle and now professor emeritus, the prime mover in establishing the

squad. His portrait was presented to him by VISCOUNTESS RIDLEY, chairman of the Princess Mary Maternity Hospital's management committee. Those at the party included senior members of the medical and nursing staffs of the Royal Victoria Infirmary, the Princess Mary Maternity Hospital, and the Newcastle General Hospital; representatives of the Board of Governors, the Regional Hospital Board, the Regional Blood Transfusion Service, and the College of General Practitioners; and the Medical Officers of Health of Newcastle, Northumberland, and Durham.

Organization of the Squad

Telephone calls for the squad are switched direct to the labour room at the Princess Mary, where a senior sister is always available. The words "Flying Squad" give priority. The sister then informs the antenatal sister on duty and calls the obstetrician and the anaesthetist. Great care is taken to record accurately the name and full address of the patient, the nature of the emergency, and the ABO and Rh blood-group of the patient. The caller is told to station at an agreed point near the house a guide, armed during darkness with a white towel or large handkerchief for identification.

The squad's equipment is in the care of the antenatal sister, and she always accompanies the squad when it goes out. Her intimate knowledge of the equipment and her wide experience in converting the most unpromising environment into an adequate labour room are of great value to the service. Owing to the considerable distances to be covered by the squad (up to 60 miles—96 km.), it has been found quicker for the consultants to collect the sister and the equipment at the hospital. To avoid any possible delay, the anaesthetist travels in his own car. This arrangement works well, as all the consultants concerned live within a short distance of the hospital, and it is extremely rare for the patient to be moved to hospital. The equipment is comprehensive and quite adequate for whatever treatment may be needed—even caesarean section, although this has been performed only in exceptionally urgent circumstances where the squad was called to a small remote maternity unit. Some squads operating in very restricted areas advocate simple resuscitation and rapid transfer to hospital by ambulance, but at Newcastle this has never been regarded as the service's proper role. Treatment is carried out on the spot.

The teaching and research undertaken last year at the London School of Hygiene and Tropical Medicine is described in its recently issued annual report. All the school's main courses of instruction were filled to capacity. The dean, Professor A. BRADFORD HILL, F.R.S., mentions that the new course for the academic diploma in applied parasitology and entomology seems likely to attract medical, veterinary, and zoological graduates of high quality. The investigation of the protein value of tropical dietaries and supplementary foodstuffs by the department of human nutrition has been greatly helped by a grant of £17,000 by the Rockefeller Foundation. The department of statistics and epidemiology has many subjects under review, in addition to the well-known continuing investigation by Dr. Doll and Professor Bradford Hill of the mortality of doctors whose smoking habits were recorded five years ago. Poliomyelitis, whooping-cough, and B.C.G. vaccines are being assessed, the epidemiology of cardio-respiratory disease is being investigated, and general practitioners have collaborated in the study of otitis media. A survey is being made of the incidence of tuberculous illness among pathologists, post-mortem room attendants, and young technicians. The department of applied physiology has looked into the problem of ventilating lecture-rooms, and in the section devoted to the work of the department of public health there is an informative account of "The Natural History of Study Groups," based on experience gained during the courses for the D.P.H.

Preparations and Appliances

MODIFIED BRONCHOSCOPIC FORCEPS

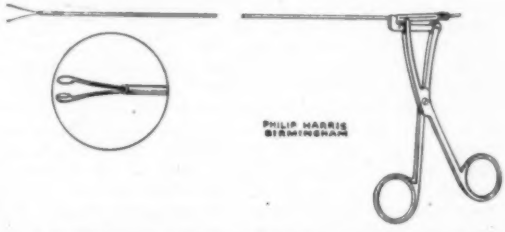
Mr. KEITH D. ROBERTS, F.R.C.S., of the Children's Hospital, Birmingham, writes: Foreign bodies in the adult's and child's bronchial tree may be dealt with adequately using the present range of biopsy and grasping forceps. However, in neonates and infants the size of the bronchoscope introduced (3 or 4 mm. diameter) precludes the use of a normal-sized forceps, as the view obtained with the forceps down the bronchoscope is extremely poor, and in addition the airway is almost completely obstructed.

A boy of 21 months was admitted to hospital having inhaled a widely open safety-pin; this was lying with the point directed up the trachea, the remainder of the pin being in the left main bronchus. A 3-mm. bronchoscope was introduced through the larynx, which was extremely small, but the pin could not be grasped with the available forceps owing to the poor view; a tracheotomy was done and a 4-mm. bronchoscope inserted through this. Again the pin could not be extracted, and a bronchotomy had to be done in order to remove it. Unfortunately the child became anoxic and cardiac arrest occurred before the endotracheal tube had been passed. Although the child's heart-beat was restored by endotracheal insufflation with oxygen and cardiac massage, irreversible cerebral damage had resulted and he died 20 hours later.

In view of this tragedy two biopsy forceps of 2-mm. and 3-mm. diameter, of Chevalier Jackson type, were specially made and have recently been used successfully in several children under 2 years of age.

A boy of 2 years had a post-anaesthetic aspiration of vomit in another hospital following an operation for strangulated inguinal hernia. A tracheotomy was done there in order to clear the airway by suction, as the hospital had no small endoscopic forceps available. A radiograph showed atelectasis of the right upper and middle lobe with obstructive emphysema of the lower lobe, suggesting the presence of a foreign body in the right main bronchus. He was transferred to the Children's Hospital, Birmingham, where a 4-mm. bronchoscope was introduced through the tracheotomy. A nut was seen in the right main bronchus, and was easily extracted under direct vision using the 3-mm. biopsy forceps.

It was felt that the best pattern of forceps to be constructed was the biopsy type, as metallic foreign bodies can be grasped with these, while vegetable matter, such as nuts, are more easily held than with the ordinary type of grasping forceps.



Details of these forceps are as follows: (*a*) Biopsy forceps, 2 mm. diameter cup jaws; inserting length 35 cm., with 2 mm. shaft; stainless-steel handle; suitable for use through Chevalier Jackson and Negus type newborn infants' bronchoscopes having an internal diameter of 2.5 mm. or more over the light-carrier. (*b*) Biopsy forceps, 3 mm. diameter cup jaw; inserting length 35 cm., with 2.4 mm. shaft; stainless-steel handle; suitable for use through Chevalier Jackson and Negus type infants' bronchoscopes having an internal diameter of 3.5 mm. or more over the light-carrier. Both forceps are of the usual tubular type—that is, the action of the handle forces a slender tube over the stylet which carries the jaws.

I am indebted to Mr. J. Blair, of Messrs. Philip Harris, Ltd., Birmingham, 3, for his help in the construction of these forceps.

Reports of Societies

PSYCHIATRIC INDICATIONS FOR TERMINATING PREGNANCY

The Section of Psychiatry of the Royal Society of Medicine met on February 12, with the President, Dr. WILLIAM SARGANT, in the chair, to discuss "The Psychiatric Indications for the Termination of Pregnancy." Members of the General Practice Section were specially invited to attend. The meeting was distinguished by the complete lack of agreement on what constituted grounds for advising termination in women suffering from mental illness.

Quot Homines, Tot Sententiae

Dr. J. D. W. PEARCE (St. Mary's Hospital, London) opened the discussion by reminding the audience that in Britain abortion was a felony punishable by life imprisonment. It could be condoned only when the life of the mother or her mental or physical health was at stake. The psychiatrist must ask two questions—what psychiatric conditions were likely to be aggravated by pregnancy, and how serious must these be to warrant termination? A review of the literature revealed distressingly little uniformity of opinion: in general, termination was recommended for organic psychoses, severe depression, and suicidal tendencies, but there were those who said it was rarely needed even in the most severe cases. Very often mental disorders arising early in pregnancy improved with time, while those appearing later persisted after the puerperium and were not influenced by termination. It was therefore wise to wait until quickening rather than advise premature hysterotomy. There was more agreement, however, on when not to terminate: psychoneurosis, for example, was never an indication, and psychopaths benefited from pregnancy. There was a very real danger that abortion would produce a guilt complex in the mother.

Dr. Pearce found a similar lack of common ground when he analysed questionaries sent to 45 psychiatrists and one general practitioner. The majority agreed that there must be a clear causal relationship—for example, a previous breakdown during pregnancy—between the psychiatric illness and pregnancy, and that severity was a useful criterion. There was a deplorable lack of precise knowledge of the effects of pregnancy and abortion on the course of mental illness. What was needed was a group of specialists, including the general practitioner, to study each patient on her merits, preferably in hospital. With adequate medical care in the fullest sense probably very few women would be advised to seek termination. So often those in a position to offer advice were influenced by emotional, ethical, moral, and religious views rather than by objective criteria based on scientific evidence.

Experience at Manchester

Professor E. W. ANDERSON (Manchester Royal Infirmary) also stressed the paucity of the material and the difficulty of scientific investigation in a field which by its nature precluded accurate assessment. There had been remarkably few attempts to systematize what knowledge there was. Up to 1933 in England the weight of evidence was against the increasing tendency to terminate pregnancy. Since then experience in countries like Switzerland and Sweden, where abortion laws had been relaxed, suggested that, while a majority of women expressed satisfaction with termination, a definite proportion continued to have mental symptoms. He had analysed the records of 52 patients with psychiatric illness who had been referred for termination and/or sterilization. Half of these had threatened suicide; diagnoses were mixed, but there were no certain schizophrenics in the series. Only one of the twelve patients whose pregnancies had been terminated showed definite improvement, and half of those who were allowed to proceed to term had had no further trouble. On the other hand one of the very definite risks of refusing termination was that the patient herself would attempt abortion. The resilience of women in the face of stress was often underestimated, and there seemed very little medical justification for termination of pregnancy on psychiatric grounds. But if the State insisted on continuation of pregnancy, said Professor Anderson, then it must provide adequate social services to protect the mentally ill or unstable mother.

Winchester Abortion Panel

Professor W. C. W. NIXON (University College Hospital, London) made an impassioned plea for the gynaecologist, on whom fell the onus of performing the operation "in good faith." It was very difficult for him to assess the risk to the patient, especially where there were threats of suicide, but if there was a likelihood of injury to health then abortion was justified. Antagonism must never be allowed to develop between the psychiatrist and the gynaecologist, though this was likely to happen if the latter felt that he was being used merely as a technician. There was a great need for an "abortion panel" on the lines of that started at Winchester ten years ago by Mr. Philip Mitchell. This consisted of six members of the hospital staff elected annually, and proceeded as informally as possible. The patient was referred by the general practitioner in the usual way for an opinion from the gynaecologist and the appropriate specialist. The whole case was then reviewed by the panel. The patient and her husband and the general practitioner were invited to attend. For such a scheme to work successfully it was vital that both the clinician and the gynaecologist should abide by the majority opinion of the panel, even if it was contrary to their personal view. Equally important in the whole problem of termination was the fullest possible follow-up, and particularly adequate contraceptive advice. In one Swedish series no less than 20% of the patients had unintentionally become pregnant again in the 12 months following termination in spite of such advice. This should not be allowed to happen.

A review of just over 500 patients whose pregnancies had been terminated in the last 18 years at University College Hospital showed that 39% had had psychiatric disorders, and these headed the list of indications. On the other hand mental symptoms would yield to early and sympathetic care, particularly in hospital. No gynaecologist should be asked to terminate a pregnancy at a stage later than the 14th week. The hazards of therapeutic abortion in the second trimester were very real: long-term effects such as sterility, habitual abortion, and endocrine shock were as important as the operative risks involved; in addition there was the overwhelming sense of detestation in those who had to carry out what amounted to no less than a caesarean section in miniature.

Discussion

In the discussion which followed Dr. ALECK BOURNE said that termination was useless in established psychoses. Dr. E. TYLDEN quoted case histories to show that it was virtually impossible to predict the effect of a particular course of action in the individual patient, except possibly in puerperal psychosis, where prodromal symptoms might be recognized early enough to make termination of value. Dr. BRIAN ACKNER hoped that psychiatrists would not prejudice the decision of the gynaecologist by what they said to the patient about termination. Dr. E. STENGEL assured the audience that in spite of the frequency of threats of suicide the incidence in pregnancy of the act itself was extremely low. Other speakers confirmed the general impression that it was quite impossible to lay down definite criteria for termination, and that there was a pressing need for study by groups of interested persons. The tone of the meeting was summed up by a general practitioner, who said that he was becoming increasingly convinced that termination for mental illness was not the right answer.

Correspondence

Because of heavy pressure on our space, correspondents are asked to keep their letters short.

Carbon-monoxide Poisoning

SIR,—In his letter (*Journal*, February 9, p. 338) Dr. H. L. Marriott severely criticizes the statistical evidence which led me to the conclusion that the specially collected figures of my report to the Medical Research Council do not support his suggestion that the large rise in deaths from carbon-monoxide poisoning in England and Wales in the years 1953 to 1955 may be the result of the change in resuscitation procedures adopted in local-authority ambulances.

Referring to a tabulation that I made for London, of emergency calls classified as suicide or attempted suicide due to coal-gas poisoning, Dr. Marriott asserts that the main inference reads that "the number of cases carried has, in fact, increased very substantially—from, roughly, a little over 100 in 1951 and 1952 to well over 200 in 1953 to 1955." Reference to my report will show that I myself laid no stress upon this increase in the absolute numbers. Having, without emphasis or comment, made the factual statement quoted above, I went on to point out that, regardless of the absolute numbers and with a proportion of cases treated in ambulance that had not materially changed between 1951 and 1955, the proportion reported dead on arrival at hospital had not risen. The figure was 35% dead in 1951–2 and 31% dead in 1953–5. It is this comparison that is crucial, but Dr. Marriott makes no reference to it.

I was, however, reluctant to accept this result at its face value, since, as I pointed out, the definition of "suicide" as compared with "accident" had been changed in London in 1952. To overcome this possible flaw in the comparisons I specially scrutinized the thousands of accident records to reach a complete count of *all* coal-gas poisoning cases removed by ambulance in 1951 and 1953. Dr. Marriott refers to these data as relating only to two "selected" years—as if there were some bias underlying the selection. In fact 1951 was the last year in which the ambulances carried CO_2/O_2 mixture and 1953 the first full year in which they carried O_2; these two years, therefore, are precisely those which give the contrast Dr. Marriott requires. Between them there occurred a rise of 36% in the coal-gas emergency calls. Concurrently the relevant deaths in London rose by 29%. Dr. Marriott ignores this latter figure, although clearly it is this close correspondence between the rise in ambulance cases and the rise in deaths that is fundamental to any valid conclusion.

Similarly, in criticizing the "scanty data" that I was able to collect from provincial cities, he does not point out that the rise of 30% in their ambulance cases also closely mirrors the concurrent rise in deaths in all England and Wales (24%). Nor does he note that 8 out of the 9 provincial towns that could provide data had recorded an increase in their ambulance calls for coal-gas poisoning over the relevant years.

In short, both in London and the provinces the rise in mortality commented upon by Dr. Marriott appears to have been associated with a rise in the number of cases occurring as measured by the ambulance emergency calls. It was the consistency of this evidence that led me to a conclusion worded, very deliberately, as follows: "The data are clearly not precise enough to prove accurately the relative advantages (or disadvantages) of the CO_2/O_2 mixture compared with pure oxygen and they were not collected for that purpose. They are, however, sufficient to make it extremely difficult to believe that the pronounced increase in mortality of recent years is primarily due to any such difference." I see nothing in Dr. Marriott's criticisms of the statistical data which would lead me to alter either sentence of that statement.—I am, etc.,

London, W.C.1. A. BRADFORD HILL.

SIR,—The indiscriminate use of CO_2/O_2 mixture in cases of coal-gas poisoning that might arise if it was universally available in first-aid and ambulance services, as advocated by Dr. H. L. Marriott (*Journal*, February 9, p. 338), is not without its dangers, and these might well offset its advantages.

My personal observation of more than 50 such cases reaching hospital last year led me to divide them into three broad groups:

(1) Those who are fully conscious and breathing normally but blood examination confirms the history.

(2) Those who are comatose or unconscious but with a good colour and a normal rate and depth of respiration.

(3) Those deeply unconscious or having depressed respiration.

The routine procedure in treating cases in group 1 was to give CO_2/O_2 mixture and fresh air in alternate periods of five minutes for about half an hour, using a B.L.B. mask. This probably speeds up the removal of carbon monoxide, but all these cases will recover fully without any specific treatment.

The routine treatment for cases in group 2 was continuous CO_2/O_2 mixture, with which many of them quickly showed improvement in the depth of unconsciousness, and when fully conscious they were treated as in group 1. If no improvement was seen in ten minutes preparations were made to give whole-blood transfusion. This is the group where the use of CO_2/O_2 mixture is of great help, and may be life-saving as the definitive treatment. In cases in group 3, CO_2/O_2 mixture was never used, since the depressed respiratory centre would be further depressed by CO_2. These cases were given pure oxygen from a Boyle's machine with assisted respiration when necessary and a blood transfusion begun immediately. After such treatment the respiration improves and the procedure for cases in group 2 followed.

This leaves only cases in group 2, where the CO_2/O_2 mixture is of real use, and these cases have to be carefully separated from those in group 3, where the mixture may be lethal. The main function of ambulance and first-aid services is to give immediate treatment and remove the patient as quickly as possible to some centre where all facilities are available. Since no patient in the second group of my classification will die without first reverting to group 3 for some time, the routine use of CO_2/O_2 mixture in all cases would seem to be contraindicated.

The total number of deaths from coal-gas poisoning may be of interest to the Registrar-General, but to medical men assessing the results of treatment the figures needed are of those *found alive* who subsequently die in spite of treatment. Of the cases mentioned above—they received first-aid treatment from the Hertfordshire Ambulance service, for whom I have the highest praise—not one case was lost, and I expect that most hospitals have a very high proportion of recoveries among those cases that reach them.—I am, etc.,

Stanmore, Middlesex. A. W. WARLTIER.

Treatment of Acute Appendicitis

SIR,—I have followed with interest the correspondence in your columns arising from Mr. Eric Coldrey's paper on the conservative treatment of acute appendicitis (*Journal*, December 22, 1956, p. 1458). Most of your correspondents seem agreed that, at least in cases occurring on board ships at sea, this method should be employed. I was once in the position of having to answer the question, "To operate or not to operate?"; and as my decision met with considerable adverse comment in the popular press my experience may be of interest to your readers.

During the first half of last year I was the medical officer of the Swiss expedition which, following the British success, also conquered the summit of Mount Everest and other Himalayan peaks. At the end of March, at an altitude of 4,000 metres, one of the members of the expedition exhibited all the classical signs and symptoms of acute appendicitis. Generalized abdominal muscle guarding and a high fever portended the imminence of a perforation. Conditions were most unfavourable for an emergency operation: altitude of 4,000 m. (about 13,000 ft.), with the provocation of Cheyne-Stokes respiration; temperature of several

degrees below zero; lamentable conditions of asepsis; rather poor condition of the patient. We were at the monastery of Thiang Boche, but the religion of the monks strictly forbade the shedding of blood in the monastery, so I had to be content with utilizing (with the assistance of the monks) an abandoned shelter.

I commenced treatment with 6-hourly injections of 2 ml. of "combiotic" (procaine and potassium penicillin and dihydrostreptomycin), and, after some deliberation, administration of opiates to control the paroxysms of vomiting. The following day there was some amelioration: less muscle rigidity, with localization to the right iliac fossa; pulse and temperature somewhat lower, only to rise again that night. I continued antibiotics, with the addition of oxytetracycline together with injections of vitamin C + Ca in high doses. Urinary retention then occurred, and an indwelling catheter was inserted. Complete silence of the abdomen to auscultation further indicated the onset of a paralytic ileus, probably consequent on perforation of the appendix. The patient was now, on the third day, very dehydrated. The Miller-Abbott tube and most of the infusion solutions were in the equipment which was still in transit. I did, however, have five flasks of human albumin, of which I immediately transfused two with some improvement. I then commenced the preparation of a "physiologic" solution of glucose-saline. Using kitchen salt and glucose from our assault rations, with no balance available I endeavoured to estimate 1% NaCl and 20% glucose. This was then sterilized in a double saucepan. The continued infusion of this solution resulted in considerable improvement. Further liquid was supplied by the rectal route.

On the seventh day a marked improvement was noted, and the intestinal sounds were once more heard. The signs in the right iliac fossa were still present, and the temperature varied between 99.6° and 101.4° F. (37.5° and 38.5° C.). However, the hoped-for signs of a localized abscess which could have been incised did not appear. On the tenth day the patient was afebrile, and after a convalescence of a further eight days was able to continue the climb. Six weeks later he first reached the summit of Lhotse.

On returning to Switzerland, an interval appendicectomy was performed. A short appendix with a stricture at its base which had almost caused a spontaneous amputation was found, bound down by adhesions. The pathologist reported "chronic appendicitis with a cicatricial neurinoma—perforation could not be confirmed with certainty."

This brief case history serves, I think, to illustrate that under adverse and primitive conditions conservative treatment for acute appendicitis is more likely to lead to a happy outcome than the heroic (and journalistically popular) operative treatment.—I am, etc.,

Zurich. ED. LEUTHOLD.

SIR,—Dr. R. F. Bolam's implication (*Journal*, February 9, p. 342) that an operation will *always* enable the surgeon to distinguish between a carcinoma of the caecum and a late case of acute appendicitis "with mass formation" is unfortunately not correct. Many years ago a very experienced and distinguished surgeon honoured me by joining my ward round. In those days my beds were full of various surgical abdominal conditions. At the end of the round he asked me if I had ever resected the right side of the colon for acute appendicitis. Being young, I hotly denied having committed such a mistake. Quietly I was told that after further experience I probably would, for the great man had done so himself.

Within a year, and in a patient whose radiograph showed a caecal filling-defect, that wise remark stayed my hand. Three months later I reopened the abdomen and removed a retrocaecal appendix from a mass of dense adhesions. Some time later a most competent colleague, to whom I had told this story, showed me the specimen of an extensive resection he had just performed for "acute appendicitis with mass formation."—I am, etc.,

Birmingham. WILLIAM GISSANE.

Torulosis and Hodgkin's Disease

SIR,—Your annotation on the association of torulosis and Hodgkin's disease (*Journal*, February 2, p. 277) draws attention to an interesting problem. It is therefore the more a pity that a number of unexpected omissions spoil an otherwise informative summary. Much that is relevant to the subject of the annotation has been written during recent years, yet only four of the eleven references which you give are dated after 1951, and even these are in the "case-reports and commentary" category. The classical monograph on torulosis by Cox and Tolhurst[1] is not mentioned, in spite of much matter in it which is pertinent to the association of this infection with various forms of lymphadenopathy. Even the comprehensive study by Littman and Zimmerman[2] is ignored, although it must be a standard reference work for all interested in torulosis. The strangest omission of all is the work of Zimmerman[3,4] and his associate Rappaport[3]: with the unequalled material in the Armed Forces Institute of Pathology (A.F.I.P.) in Washington, D.C., at their disposal they have had greater opportunity to study the relation between deep-seated fungal infections and primary malignant diseases of the lymphoreticular system than any others who have written in this field.

Zimmerman and Rappaport[3] reviewed 60 well-documented A.F.I.P. cases of torulosis: in no fewer than 18 (30%) the fungal infection was associated with an unequivocal malignant disease arising in the lymphoreticular system (Hodgkin's disease in 11 cases, leukaemia in 4, reticulum-cell sarcoma in 2, and multiple myeloma in 1). In every case clinical manifestations of the "lymphoma" or leukaemia antedated those of torulosis by months or years; in only a third of the cases was there clinical evidence of torulosis before the last month of life, and the longest known duration of the infection was 4½ months. No other diseases were so frequently associated with torulosis as Hodgkin's disease and allied conditions. Zimmerman and Rappaport[3] noted that malignant disease of the lymphoreticular system not only predisposed to torulosis but also influenced the dissemination of the organisms: disseminated infection accounted for 24 of their 60 cases of torulosis, and in 15 (62%) of these 24 cases there was an associated lymphoreticular disease. These authors' conclusions summarize the problem so well that they deserve to be quoted: "A study of the literature and of 60 cases of cryptococcus infection [torulosis] from the files of the A.F.I.P. revealed a high incidence of association with Hodgkin's disease and allied disorders. Speculations concerning this association have included: (*a*) chance occurrence; (*b*) a tissue response to the fungus which mimics the malignant diseases; (*c*) an aetiologic role in Hodgkin's disease of the cryptococcus or a substance derived from it; (*d*) increased susceptibility of patients with these malignant diseases to infections including cryptococcosis; and (*e*) increased susceptibility to infectious diseases as a result of therapy of lymphoma and leukaemia by agents that damage the remaining normal reticuloendothelial tissues." From this study they concluded that the only explanation which adequately fits the facts is that patients with Hodgkin's disease and allied disorders have an increased susceptibility to infections, among them torulosis. Zimmerman[4] later brought the number of A.F.I.P. cases of torulosis studied up to 74: of this total, 24 (32%) were associated with "malignant lymphoma" (including Hodgkin's disease) or leukaemia. He also found that seven (24%) of 29 cases of fatal histoplasmosis were associated with "lymphoma" or leukaemia. Apart from these fungal infections, patients with Hodgkin's disease are well known to be unusually susceptible to tuberculosis. Interestingly, there are even two cases on record of patients with Hodgkin's disease who developed both torulosis and histoplasmosis and also tuberculosis.[5,6]

The evidence in fact seems clearly to favour the second of the alternatives noted in the closing part of your annotation—that the cryptococci "appear late on the scene . . . in patients whose immunological response to infection is impaired." Dubin,[6] whom you mentioned, wrote of the poverty of the immunological mechanism in patients with Hodgkin's disease: the immunological disturbances in Hodgkin's disease have been reviewed again more recently by Schier and his associates.[7] Similar immunological disturbances may occur in other diseases in which a considerable part of the lymphoreticular system is affected, including not only other primary malignant diseases of the system but also a disease of quite different nature—sarcoidosis: there is some evidence that sarcoidosis too may predispose to deep-seated fungal infections.[8]

There is no evidence that cryptococcal infection can cause Hodgkin's disease, and very little evidence indeed that it can ever evoke a tissue reaction which at all closely mimicks Hodgkin's disease. One of the more remarkable instances of the latter possibility was a case of mine,[6] which, like

Levene and Michaels,[9] you have misquoted as a case of Hodgkin's disease: in fact there was not more than a superficial resemblance histologically to Hodgkin's disease: the case was a difficult and complex one, but there is no justification for interpreting it as Hodgkin's disease. Well-proved cases of Hodgkin's disease in which torulosis developed as a terminal infection have now been recorded often enough for the fact of this association to merit acceptance. In view of the evidence, does your annotation not err too far on the side of caution in describing the association as between torulosis and *a lymphadenopathy closely resembling* Hodgkin's disease? Cannot the words which I have put in italics be left out?

If you will allow me the space, Sir, may I mention what seems to be a bibliographical anomaly in the annotation? Your reference to Busse and Buschke suggests a joint communication. In fact Busse and Buschke never collaborated in print, although each published a number of contributions based on the same case. The journal reference which you printed is to a summary of the proceedings of a session of the *Greifswalder medicinischer Verein* on July 7, 1894: the various papers are clearly numbered as separate abstracts: the first two, which relate to the case in question, are attributed respectively to Buschke and Busse, and should surely be listed independently in a bibliography.[10 11] In any event, priority in print must be conceded to Busse, whose lecture to the Greifswald meeting was published in full[12] before the abstract appeared, although Buschke seems to have had the first word at the meeting itself.

In conclusion, then, it may be said that the great majority of cases of Hodgkin's disease remain free from torulosis, and that most cases of torulosis occur without any evident predisposing cause. It is impossible to say how frequently the two diseases are associated: Zimmerman and Rappaport[3] found the association 11 times among their 60 cases of torulosis, and the 60 cases were filed at the A.F.I.P. during about the same period as "over 1,000" cases of Hodgkin's disease. This suggests an incidence of one case of torulosis among about a hundred cases of Hodgkin's disease, and there are obvious reasons for taking this figure as only the roughest guide to the real incidence. A search for predisposing factors in patients with torulosis, and a complementary study of immunological behaviour in patients with Hodgkin's disease and the like, are potentially useful lines of research. Meanwhile, it is worth remembering that recurring headaches in a patient with Hodgkin's disease can signify the clinical onset of torulosis of the brain or meninges and should not too readily be attributed to radiation malaise or other passing cause.—I am, etc.,

Northwood, Middx. WILLIAM ST. C. SYMMERS.

REFERENCES

1 Cox, L. B., and Tolhurst, J. C., *Human Torulosis*, 1946. Melbourne University Press.
2 Littman, M. L., and Zimmerman, L. E., *Cryptococcosis—Torulosis or European Blastomycosis*, 1956. Grune and Stratton, New York and London.
3 Zimmerman, L. E., and Rappaport, H., *Amer. J. clin. Path.*, 1954, **24**, 1050.
4 Zimmerman, L. E., ibid., 1955, **25**, 46.
5 Rodger, R. C., Terry, L. L., and Binford, C. H., ibid., 1951, **21**, 153.
6 Dubin, I. N., *Ann. Intern. Med.*, 1947, **27**, 898.
7 Schier, W. W., Roth, A., Ostroff, G., and Schrift, M. H., *Amer. J. Med.*, 1956, **20**, 94.
8 Symmers, W. St. C., *Lancet*, 1953, **2**, 1068.
9 Levene, M., and Michaels, L., *J. clin. Path.*, 1955, **8**, 201.
10 Buschke, A., *Dtsch. med. Wschr.*, 1895, **21**, Vereins-Beilage, 14.
11 Busse, O., ibid., 1895, **21**, Vereins-Beilage, 14.
12 —— *Cbl. Bakt.*, 1894, **16**, 175.

Antibiotic Cover for Dental Extractions

SIR,—The thought-provoking article by Drs. F. G. Hobson and B. E. Juel-Jensen (*Journal*, December 29, 1956, p. 1501) contains statements leading to far-reaching therapeutical conclusions that cannot be accepted uncritically. Cases of subacute bacterial endocarditis are classed in two groups as due to *Str. viridans* or other organisms; in 42% of the former, however, blood cultures were negative, bacteriological diagnosis resting thus on clinical grounds, which are hardly ever conclusive. Nevertheless, the essential difference between patients with positive and negative haemocultures is amply revealed by the fact that only 18% of the former, but 39% of the latter, died in course of active treatment. Due consideration for the more serious prognosis of abacteriaemic subacute bacterial endocarditis—as already demonstrated by us[1] on over 1,000 cases observed during 1945–51 in Hungary—would have guarded the authors against the statement contradicting most literary data that immediate mortality is unaffected by the intensity of antibiotic therapy. As a matter of fact, they had almost identical numbers of deaths in 1946–50 with low, and in 1951–5 with higher, penicillin doses; the different composition of both groups, however, should not be disregarded, as negative blood cultures totalled a third of the first, but one-half of the second. Within this prognostically unfavourable fraction, 4 out of 7 died during 1946–50, and 4 out of 14 during 1950–5, increased dosage of the antibiotic producing thus a 50% reduction of mortality, quite in accordance with our own findings. In the light of the authors' own data, the view that the organism concerned and the antibiotic used will largely determine the final success or failure seems justified and the search for some other explanation less imperative.

No experienced physician will underrate the importance of infected teeth and incautious dental surgery in the pathogenesis of subacute bacterial endocarditis. The authors' observation that no case of viridans-caused or abacteriaemic endocarditis ever occurred in an edentulous individual is very interesting and calls for confirmation on greater material (the high frequency of completely toothless persons in the control group—40% in the fifth and 62% in the sixth decade of life—somewhat surprises me, but may be accounted for by local and national differences). While fully agreeing with the authors concerning the necessity of removing infected teeth under adequate "cover," I hardly see my way to live up to their postulate of extracting all intact teeth too as an essential item of the therapeutic attack upon subacute bacterial endocarditis. I am almost sure the majority of physicians will abstain from extracting prophylactically all the excellent teeth of a patient in symptomless remission (Case 4) as long as there is little more standing for it than the statistically rather insignificant fact that, of seven patients stripped of all teeth, none relapsed, although 1.4 relapse should have been observed according to the computed rate of expectation.—I am, etc.,

Budapest, Hungary. G. GOTTSEGEN.

REFERENCE

1 Biro, L., and Gottsegen, G., *Acta med. Hung.*, 1955, **7**, 21.

Long-acting Antibiotics

SIR,—While pharmaceutical manufacturers are searching the earth for new antibiotics they have neglected one aspect of research which would be of greater benefit to patients in general practice. I am writing this letter as a plea to drug houses to provide us with the newer antibiotics in a form that can be injected at infrequent intervals. In hospital a drug can be administered six-hourly by a stroke of the pen, but outside we are all familiar with the patient who has a few capsules remaining a week after we have prescribed a five-day course, and with little Willy "who was much better after he had a dose of Johnny's medicine." Many of our patients, given careful instructions, can be trusted with oral antibiotics, but others cannot, and for these we need the newer antibiotics in forms similar to procaine and benethamine penicillin.—I am, etc.,

South Shields. R. W. NEWMARK.

Toxic Psychosis Caused by "Preludin"

SIR,—Dr. M. F. Bethell (*Journal*, January 5, p. 30) and Dr. Lewis Clein (*Journal*, February 2, p. 282) reported the cases of two female psychopaths who developed abnormal mental states after taking excessive doses of preludin for several months. The history of a patient recently admitted to this hospital shows several features closely resembling in particular those of Dr. Clein's patient.

A male neurotic alcoholic, aged 35 years, had in the past taken amphetamine, dexamphetamine, and, to counteract their effects,

pentobarbitone at night-time to excess. In August, 1956, he stopped drinking, and, anxious to reduce his overweight, he began to take preludin. He soon found that by increasing the dosage he experienced a "kick" similar to that obtained from alcohol and a feeling of exhilaration and well-being, three or four preludin tablets having an effect on him comparable to that of one amphetamine or dexamphetamine tablet. However, gradually preludin took "a worse grip" on him than alcohol had before. He needed more and more tablets to achieve the same effect, and, as he could not acquire nearly enough preludin on prescription to satisfy his craving for it, he began to buy it from chemists in different districts of the town. For the first two weeks the pleasant effects of five to eight tablets lasted two to three hours and were then followed by feelings of depression and irritation, headache, and difficulty in concentrating and insomnia. To dispel this "hangover" he regularly took three butobarbitone tablets at night-time. By December the doses of preludin had gradually increased to 20 tablets in the morning and 50 in the evening, followed later by eight butobarbitone tablets taken as an "antidote." The effect of 50 preludin tablets lasted about six hours, during which time he was excited, over-confident, and garrulous. When the effect of preludin began to wear off he felt that people were staring at him and looking at his eyes.

During the whole of this period he had been off alcohol, except on one occasion when he had no sleeping tablets in stock after having taken 40 preludin tablets. He therefore took 4 pints (2.3 l.) of cider in the evening, but these did not prevent a severe hangover next morning. He then consumed 20 more preludin tablets and a double gin, afterwards feeling confused, walking unsteadily, and thinking that a policeman was watching him. According to the patient's own estimate his average daily preludin dose over the four months had been about 50 tablets. At the end of this period he was—according to his wife's account—in an excitable and irritable state; he avoided going to public places, as he felt people were looking at him, and he complained that people were insulting him. He had lost 3 stone (19 kg.) in weight in the four months. Both the craving, and especially the hangover, were described by the patient as stronger with preludin than in the case of alcohol. It was only when the preludin effect was wearing off that he felt depressed and had other disagreeable symptoms. When the supply of butobarbitone tablets was stopped by his doctor early in December the fear of the unpleasant preludin withdrawal symptoms apparently proved greater than his craving for the exhilarating effect of preludin, and he stopped taking preludin tablets at the same time as butobarbitone. In the next few days he felt restless, "vague mentally," depressed, and he could not sleep at night. Four days afterwards he suffered an epileptiform convulsion (? barbiturate withdrawal) and was taken to hospital. An E.E.G. there is said to have been normal. He reverted to excess drinking a fortnight after stopping preludin.

As in the case of Dr. Clein's patient, the history reported here shows some of the features described as characteristic of drug addiction[1]—i.e., craving, a tendency to increase the dose, and a (psychological) dependence on the effects of the drug. These cases also bear out the opinion of the W.H.O. Expert Committee that "any substance which . . . will adequately replace the drug which has produced the addiction" (in this case alcohol and amphetamines) "must be considered as also capable of producing an addiction." Like the amphetamines, preludin seems to belong to that group of drugs "whose pharmacological action is intermediate"[2] between habit-forming and addiction-producing drugs, so that addiction to this drug can develop in certain unstable individuals.—I am, etc.,

Warlingham, Surrey. M. M. GLATT.

REFERENCES

1 *Wld Hlth Org. techn. Rep. Ser.*, 1950, **21**, 6.
2 Ibid., 1952, **57**, 10.

Prednisone and Prednisolone

SIR,—In your leading article on prednisone and prenisolone (*Journal*, January 26, p. 215) no mention was made of the importance of steroid therapy in the management of certain acute phases of leprosy. I would like to draw the attention of your readers to this omission and to the fact that references to the literature on this subject can be found in a recent paper[1] in *Leprosy Review*.—I am, etc.,

London, N.W.1. W. H. JOPLING.

REFERENCE

1 Jopling, W. H., and Cochrane, R. G., *Leprosy Rev.*, 1957, **28**, 5.

Apartheid in Blood Transfusion

SIR,—Since you have not yet closed the correspondence on this pathetic topic, I should like to comment on Dr. P. G. Preston's letter (*Journal*, December 22, 1956, p. 1487), which has just reached here. A major reason for our presence in Africa has been the impulse to eradicate harmful superstitions by education, and this process should eventually solve Dr. Preston's problems of tribal incompatibility. Unfortunately, there appears to be little secular machinery to combat the racial myths still current among literate people, while the laudable work of certain religious organizations is slow and at present of only limited appeal. Surely those international bodies which are so generous with grants for technical study could be persuaded to support a scheme in which, for example, some of our colleagues from South Africa or the southern U.S.A. could visit an area like Trinidad wher many races are living in harmony. I believe that they would return with a vastly different approach to the problem of race relations and that they could do much to curb their more fanatical countrymen. Meanwhile I can assure them that it is not difficult for a hospital with staff and patients of many African, European, and Asian origins, with a variety of religious beliefs, to run with efficiency and harmony. Our blood bank is organized on a scientific, not a superstitious, basis, without harm to patients or donors.—I am, etc.,

Trinidad. B. SYMONDS.

Mass X-ray of Refugees

SIR,—It seems that the arrival of 11,000 aliens recently in this country without any preliminary screening is quite likely to swell the tuberculous "infector pool" which we are all so concerned to empty. From every authoritative source come exhortations to weed out the old chronic infectious case, while at the same time considerable numbers of far more mobile persons are admitted to the country without any question of a systematic *x*-ray check on arrival. Apparently any amount of money is forthcoming to treat those aliens who fall ill with tuberculosis—after they have been allowed to infect those with whom they live and work—and it seems there is no lack of money for treating those whom they infect. Neither money, nor forethought, nor any national policy is apparently available for steps which would help to prevent such a state of affairs.

In 1950 my unit visited a Polish hostel for displaced persons, finding no fewer than 9 cases of extensive tuberculosis among 300 persons examined—a case rate of over 27 per thousand. Two weeks ago we visited a transit camp for Hungarians and found 2 sputum-positive cases among 240 young persons, and 8 other persons requiring further supervision. In addition, two persons with extensive disease had already been admitted to hospital before we arrived. The camp had thus a case rate of 16 per thousand, as compared with the 6 persons per thousand in the general population estimated by Cochrane[1] (Rhondda Fach survey) to have active disease. These experiences have been frequently paralleled and reported by colleagues in the mass radiography service examining groups of foreign workers in this country, yet over 7 years this seems to have caused little or no concern to our authorities, and the admission of aliens without any systematic check proceeds exactly as before.

However sympathetic we may feel towards the unfortunate Hungarians or other refugees, our first consideration is for the health of our own people, especially school-leavers and young people who may come in contact with them at work, and it seems urgently necessary that all those admitted so far should be *x*-rayed before they are placed in employment, or before they go to live or work in families with young children. Unfortunately about half the refugees have already started work, and are now scattered far and wide throughout the country. The only way they could be reached would be through the Ministry of Labour, their employers, the police, or through general practitioners with

whom they may register. May I urge the latter to arrange for a routine chest film for any new foreigner who comes on to their list? Canada, Australia, and the United States require a clear chest *x*-ray as a condition of entry for every intending emigrant. Must this country gradually accumulate the unfit or those rejected by our own Dominions? We certainly cannot afford to have 7,000 persons die a year from tuberculosis any more than they can.

It would be interesting to know whether arrangements are being made to *x*-ray the next influx of refugees from the Austrian camps, and to ask why several mass radiography units were not immediately detached at the beginning of the emergency to deal with refugees at their first holding units. As a taxpayer, and as a doctor who has spent several years endeavouring to empty the pool of potential tuberculosis infectors in the community, one takes grave exception to the lack of any firm policy in this country about allowing the uncontrolled admission of aliens who may have communicable tuberculosis. It seems quite disgraceful that no steps are being taken to stop feeding the infector pool from outside sources. It costs the country over £1,000 to keep and treat a man in a sanatorium for a year and provide for his dependants, and it is still apparently not fully recognized that mass radiography justifies itself economically if a single unit can find only a small number of cases a year at a sufficiently early stage to obviate or reduce the necessity for costly hospital treatment. If we cannot afford any extension of mass radiography facilities, surely deployment of certain units to check foreigners entering this country would be more than justified.—I am, etc.,

Cambridge. D. SMITH.

REFERENCE

[1] Cochrane, A. L., Cox, J. G., and Jarman, T. F., *British Medical Journal*, 1955, 1, 371.

Treatment of the Cord in the Newborn

SIR,—Reading, as unfortunately frequently seems to occur, back numbers of medical journals, I have come across Dr. Victoria Smallpeice's note on treatment of the cord in the newborn (*Journal*, July 14, 1956, p. 104) in which she refers to Dr. A. B. Murray's memorandum (*Journal*, June 30, p. 1530) which I had already seen, and more recently there has been another reference by Mr. A. L. Deacon (*Journal*, December 1, p. 1299). The method used here in the Hadassah Hospital has proved thoroughly satisfactory in over 8,000 deliveries for which I have been responsible during the last five years. I learnt the method here and would certainly not be tempted to revert to any other treatment. At birth in all babies known to be Rh-positive the cord is clamped by Kocher's forceps as close as possible to the umbilicus. About three hours later the cord is cut with a scalpel close to the closed Kocher's. The stump is painted with iodine tincture and the forceps are removed. Bismuth subgallate powder is then applied on a sterile gauze swab which is attached by a binder for 24 hours. The dressing is inspected after half an hour, and thereafter whenever the babies have their napkins changed. Only about four cases of slight haemorrhage have occurred and were easily controlled by a suture. If any cases of infection occurred they must have been very mild, as none returned, and we are the only hospital available. The umbilicus is dry and clean from the beginning, which is a particular advantage here where the patients are discharged from hospital three or four days after delivery. The method needs a little courage on the part of the obstetrician and nursing staff for the first half-dozen cases, but conviction quickly follows.—I am, etc.,

Beersheba, Israel. DORIS SELBY.

Varicose Ulcers

SIR,—I am replying to Dr. Peter Darby's letter on varicose ulcers (*Journal*, February 2, p. 287), because I have met in the literature an astonishing amount of dogma on this subject that does not agree with my findings when I was working in ulcer clinics at the London Hospital. Perhaps the difficulty in treatment stems from the varied pathology which can be found in this "lower leg syndrome,"[1] even when thrombosis has apparently been excluded. Nevertheless, Foote[2] asserts that all varicose ulcers can be cured, but I agree with Naide,[3] who says that some cases appear to be incurable.

Nobody will dispute that the application of some salve[2] and some kind of support may suffice. Brodie[4] described supportive treatment in 1846, although I had heard a rumour that a German peasant brought the idea over during the last war. The addition of a "venous heart" (a rubber sponge which contracts as the patients walks[5]) may promote healing. I agree with Foote and your correspondent that good, even bandaging is very important. Indeed, many patients insist that experienced bandagers gave them most relief. But it is untrue to say that one simple treatment is a panacea, and this bears out my belief that there is a varied pathology, either locally, or in the venous drainage of the limb, or in the arterial supply. To this are added the personal idiosyncrasies of the patient. The only series I have found claiming 100% success is MacAuley and Carey's[6] series of popliteal vein resections, followed by grafting in some cases.—I am, etc.,

Dublin. T. HEATON WILLIAMS.

REFERENCES

[1] Bauer, G., *J. int. Chir.*, 1948, **8**, 937.
[2] Foote, R. R., *Med. Press*, 1943, **210**, 318.
[3] Naide, M., *Amer. J. med. Sci.*, 1943, **205**, 489.
[4] Brodie, B. C., *Lectures Illustrative of Various Subjects in Pathology and Surgery*, 1846. Longmans, London.
[5] McPheeters, H. D., and Merkert, C. E., *Surg. Gynec. Obstet.*, 1931, **52**, 1164.
[6] MacAuley, C., and Carey, P., *Irish J. med. Sci.*, 1950, **6s**, 370.

Neostigmine-resistant Curarization

SIR,—I am surprised to find that in a discussion of cases of neostigmine-resistant curarization the dose of the offending drug is often omitted, and therefore places under some doubt the conclusions drawn. Dr. A. R. Hunter (*Journal*, October 20, 1956, p. 919) does not mention the dosage of suxamethonium, D-tubocurarine, or gallamine in any of his six cases. There seems to be, among anaesthetists, a wide variation in the doses of relaxants considered necessary for the production of satisfactory operative conditions. For endotracheal intubation, in the induction phase, 15 mg. D-tubocurarine is regarded as adequate by one anaesthetist, while another would not regard 30 mg. as being unduly high. Drs. W. E. B. Scott and J. C. Clarke (*Journal*, November 17, p. 1174) gave to a "small, wizened lady of 67, weighing 6½ st. (41 kg.)," with a small-bowel obstruction, as an initial dose 80 mg. of gallamine, whereas from the information given others may regard 40 mg. as being more suitable for the occasion. Dr. P. A. Foster (*Journal*, December 22, p. 1485) used 35 mg. of D-tubocurarine and 40 mg. of gallamine, which also appears to be a large dose, although admittedly we are not told the weight of the patient or the duration of operation.

And what of the criteria for administering further increments? They may be given when abdominal muscle tone is about to delay the surgeon's rate of progress or to maintain "finger-tip" controlled respirations by suppressing the first flicker of spontaneous respiration. The total relaxant given, therefore, during an operation is subject to wide variation because of the individuality of the anaesthetist, quite apart from the individuality of the patient. A record of the dosage of the relaxants, age and weight of the patient, and operative duration would, I think, provide some useful data for discussion with regard to the optimum management of these cases.

I hope that the advice of Dr. C. Langton Hewer (*Journal*, January 5, p. 45) and many others against the use of both types of relaxant in the one case will not pass unheeded. Unless the combination of relaxants is *proved* to have no adverse effect the luxury of intubation under suxamethonium should be forgone, thus eliminating one unnecessary complicating factor. In view of the fact that D-tubocurarine may depress cholinesterase activity and that suxamethonium produces marked depletion of muscle potassium, their combined use on a moribund patient would appear unwise.

I feel that overdosage of relaxant may account for many of these cases. This may occur (1) when a justifiable anxiety over vomiting makes a rapid, trouble-free intubation highly desirable and leads to a too liberal administration in the induction phase, and (2) at the point where we have to decide whether the surgeon's difficulties are due to abdominal distension or to inadequate relaxation.

Perhaps I have been fortunate not to have met neostigmine-resistant curarization using an orthodox technique of thiopentone, D-tubocurarine, nitrous oxide/oxygen, with controlled respiration, avoiding pethidine and using the thiopentone for the induction only. I have found that controlled respiration can often be maintained for an hour or so using only 15 mg. of D-tubocurarine. It is a method in which I still have every confidence.—I am, etc.,

Liverpool. ITHEL LL. FRANCIS.

SIR,—It was with great interest that I read Dr. A. R. Hunter's article (*Journal*, October 20, 1956, p. 919) and the additional reports and comments (*Journal*, November 10, p. 1113; November 17, p. 1174; November 24, p. 1240). It may well be that the cases reported can be divided into two groups.

The first group is characterized by a circulatory failure which does not respond to intravenous fluids or vasopressors for more than a short time. The accompanying general muscular weakness with its associated respiratory insufficiency seems to me to be related to the same primary cause as the circulatory disturbance. Patients of this group are old or debilitated and have a considerable upset of nutrition, with or without accompanying sepsis. This clinical picture suggests a diagnosis of acute suprarenal cortical insufficiency provoked by surgical stress, anaesthesia, or anoxaemia in a severely ill patient. These patients die, as Dr. Hunter described, of "circulatory degeneration and peripheral vascular failure . . . in spite of adequate artificial respiration." It seems to me possible that these patients could be saved by the rapid infusion of hydrocortisone, and there is probably no connexion between this complication and the use of relaxant drugs or neostigmine.

On the other hand, there is a second group characterized by profound derangement of the central respiratory modulation with muscular weakness or paralysis, but there is in them no circulatory failure, provided adequate artificial or assisted respiration is maintained. Curiously enough, these patients are sometimes able to move their limbs, though weakly, but are unable to breathe. There is a relationship between this complication and the use of fully controlled respiration, particularly in patients with emphysema. In my experience this complication occurs as often after the administration of D-tubocurarine as after an infusion of suxamethonium, and always when complete apnoea with artificial ventilation has been maintained for some time. So far I have never heard of a similar case when partial muscular relaxation with assisted respiration and small doses of relaxants have been used. Hence there is, in addition to the use of local analgesia, a possible way of avoiding this complication. If it appears in a patient, one must consider whether unnecessarily high doses of the relaxant drug have been given, or whether artificial respiration in excess of the needs of the patient has been continued for too long a time. The prognosis is not bad if the anaesthetist is patient enough to assist respiration carefully and *manually* until it becomes adequate again—a process which may take as long as four hours after the operation.—I am, etc.,

Basle. W. HÜGIN.

Noradrenaline in Shock Due to Visceral Perforation

SIR,—I wish Dr. D. D. Davies had given more information on the anaesthetic technique used in his report of three cases of post-operative circulatory collapse treated successfully with noradrenaline (*Journal*, February 2, p. 261). Each case showed an initial rise of blood pressure before the fall. This and other features suggest that the effects of carbon-dioxide retention were being added to those produced by the surgical condition. Was the respiration assisted or controlled? What type of breathing system and gas flows were used?

Trichlorethylene is an interesting agent to choose for abdominal surgery. When positive-pressure ventilation is used without carbon-dioxide absorption a non-breathing system is required to avoid respiratory acidosis. This can be achieved with devices such as the Cardiff inflating piston-type valve,[1] or a flap rubber non-return valve. The Magill semi-closed attachment will eliminate rebreathing when the patient is breathing spontaneously and when the gas flow is at least equal to the patient's minute volume.[2 3] As soon as the reservoir bag is compressed by hand, the conditions change. The expiratory valve lifts during the last part of the inspiratory phase, discharging relatively fresh gases into the room. The expired mixture is pushed back into the lungs first. Luckily a variable amount of longitudinal mixing takes place, and a healthy subject is able to withstand this not uncommon practice for a short time, but the poor risk is poorer.

Dr. Davies also questions the safety of long-acting muscle relaxants in these shocked patients. Many anaesthetists would consider D-tubocurarine to be safer than the mixed neuromuscular block produced by the suxamethonium–gallamine–suxamethonium sequence used in the three cases described.—I am, etc.,

London, E.14. J. V. I. YOUNG.

REFERENCES

1 Mushin, W. W., *British Medical Journal*, 1953, **2**, 202.
2 Molyneux, L., and Park, E. A., *Brit. J. Anaesth.*, 1951, **23**, 81.
3 Mapleson, W. W., ibid., 1954, **26**, 323.

Glycyrrhetinic Acid

SIR,—In view of the conflicting reports of the therapeutic effectiveness of glycyrrhetinic acid preparations and the suggestion by Dr. E. Colin-Jones that some isomers are active and others inactive (*Journal*, January 19, p. 161), I am carrying out a series of planned experiments in animals to investigate the anti-inflammatory actions of glycyrrhetinic acid. I am finding that some fractions of glycyrrhetinic acid are definitely active against certain types of induced inflammation, details of which will be published shortly. In reply to the letter by Drs. J. W. Cornforth and D. A. Long (*Journal*, February 9, p. 340), I have in one experiment tested an active fraction of glycyrrhetinic acid by the method described by Long and Miles,[1] and found it to actively depress the sensitivity to tuberculin in B.C.G.-infected guinea-pigs in a manner similar to cortisone. Further tests are in progress.—I am, etc.,

London, W.C.1. G. F. SOMERS.

REFERENCE

1 Long, D. A., and Miles, A. A., *Lancet*, 1950, **1**, 492.

"Pacatal"

SIR,—We were interested in the article by Drs. P. H. Mitchell, P. Sykes, and A. King on effects of "pacatal" on symptoms (*Journal*, January 26, p. 204). Pacatal has been in constant use in Prestwich Hospital for the past 12 months, during which time 300 patients were treated for periods of from 2 to 6 months. Their ages ranged from 20 to 80 years, and the period of hospitalization from 7 weeks to over 20 years. Our routine dosage has been as follows: During the first week, 150 mg. daily, increased, if necessary, after the seventh day to 300 mg. daily. In a few cases the maximum dose was 600 mg. daily. The average duration of a course was about 8 weeks, but in some cases as long as 24 weeks. A full blood count was carried out before commencing treatment, the white cells being estimated at weekly intervals during the first month of treatment and thereafter at fortnightly intervals during the remainder of the course.

The symptoms described in the *Journal*—noisiness, incontinence, and aggressive behaviour—were, generally speaking, well controlled by pacatal. We have experienced no serious side-effects with the drug. We have seen hypotonia, the symptoms of which disappear completely on cessation of the drug, but the minor side-effects, such as

dryness of the mouth, do not necessitate discontinuation of the treatment. The more serious side-effects, such as jaundice and agranulocytosis, have not been encountered in our cases, and no patient undergoing treatment by this drug has suffered any ill effects or died. We feel it is only fair to say, therefore, that we have had at least 12 months' experience with this drug on a fairly extensive scale, and consider that its use is justified. In many cases it is preferable to chlorpromazine, and certainly sensitivity reactions, such as dermatitis, have not been encountered with pacatal.—We are, etc.,

M. KRZANOWSKI.
M. ROGERS.

Prestwich, Lancs.

SIR,—We were interested in the article by Dr. P. H. Mitchell, Dr. P. Sykes, and Dr. A. King on "pacatal" (*Journal*, January 26, p. 204). We cannot give figures, but we have used it with some enthusiasm in place of chlorpromazine, since it seemed to have, and still seems to have, a qualitatively and quantitatively better action on the patient's mental state and behaviour. We now find, however, that it is the side-effects which are troublesome, and sufficiently so for us to revert to chlorpromazine not infrequently. Disturbances of accommodation are not very troublesome in the chronic psychotic, but constipation is, and is sometimes difficult to detect early. Dryness of the mouth is also common and troublesome, frequently causing appearances like those of vitamin B deficiency, and in two of our cases there was a sudden acute parotitis. We have seen mild hypotensive and ataxic symptoms but no leucopenia or jaundice (we have, however, had only one case of jaundice from chlorpromazine in the hospital in spite of extensive use of the drug).—We are, etc.,

E. A. BURKITT.
P. E. RIXON.

Norwich.

SIR,—I should like to comment on the article on "pacatal" by Drs. P. H. Mitchell, P. Sykes, and A. King which appeared in the *Journal* of January 26 (p. 204).

I have recently completed an investigation with pacatal on 50 (25 male and 25 female) chronic psychotic patients, the results of which have not yet been published, and found very little in the way of toxic complications. Although two deaths occurred in the course of the trial, they were not unexpected and were not due to pacatal, but it was considered that the effects of the drug as a contributory factor could not be entirely excluded. One, a woman aged 68, had been on 150 mg. of pacatal daily for six weeks when she developed a temperature and was found to have a *Bact. coli* urinary infection. The drug was stopped and the pyelitis responded to antibiotics, but she died 17 days after pacatal was stopped. The cause of death, ascertained by necropsy, was (1) acute congestive heart failure, (2) myocardial degeneration, (3) coronary atherosclerosis. Eight days after stopping pacatal she developed an adenitis of the submandibular salivary glands which may well have been connected with the decreased salivation produced by the drug. The other death was in a male, aged 48, a mental defective with superimposed schizophrenia in poor physical condition at the onset of treatment who required every nursing attention. He received pacatal 150 mg. daily for six weeks, pacatal 75 mg. and chlorpromazine 75 mg. for four weeks, chlorpromazine 150 mg. daily for five weeks, and finally pacatal 300 mg. daily for eight days. His physical condition continued to deteriorate slowly during the investigation, and all drugs were eventually stopped. The physical deterioration continued, and he died 19 days after pacatal was stopped. The cause of death, ascertained by necropsy, was (1) acute congestive heart failure, (2) myocardial degeneration, (3) schizophrenia.

The average age in my series was 46.3 years as against 59.5 years in the group of Dr. Mitchell and his colleagues, and the average stay in hospital 12 years against 21 years. No case of jaundice occurred. In their cases, 10 patients developed hypotonia. Seven of my patients (2 male and 5 female) showed unsteadiness and loss of balance, and two of these had other features suggestive of incipient Parkinsonism. However, in my series this toxic feature appeared in all but one case on 300 mg. of pacatal daily and soon disappeared on reducing the dose. Only in one male patient did the loss of balance persist with the reduced dosage, and this necessitated stopping the treatment. When this investigation was begun the danger of agranulocytosis had not been reported, but a careful clinical check was kept on all patients, although routine white counts were not done. There was no suspicion of this complication in any of the 50 cases. Our consultant pathologist, who conducted the necropsies on the two patients who died, reported that there were no findings suggestive of agranulocytosis. There were two instances of recurrent vomiting, but again only on the higher dosage.

Dr. Mitchell and his colleagues quote the report of Kline and Jacob,[1] who also recorded serious toxic effects. However, Kline[2] has since written that his material, supplied from Germany, was probably either contaminated or inadequately prepared. He has used the product manufactured in the U.S. for nine months, and, although this has side-effects (as does any effective medicament, including those in the psychiatric field), there is evidence that there was something wrong with the batch on which they did their original examination. Bowes[3] reports that constipation occurred in 10% of a series of 250 cases, and if this was overlooked the patients became quite toxic and started vomiting. In my investigation a laxative was given as a routine twice weekly, and this might well account for the relatively few serious toxic side-effects that I found. In Bowes's 250 cases there was no evidence of liver or kidney damage and no cases of agranulocytosis, although he did have two instances of leucopenia, in one of which the white count gradually returned to normal in spite of persisting with the drug.

From reports, which my findings confirm, pacatal would seem to be a valuable tranquillizing agent which is worthy of further investigation. However, a careful physical check must be kept on patients to whom it is administered, and I fully agree with Dr. Mitchell and his colleagues that it should not at present be used in out-patient practice.—I am, etc.,

R. WALLACE SIMPSON.

Fareham, Hants.

REFERENCES

1 Kline, N. S., and Jacob, G. M., *Amer. J. Psychiat.*, 1955, **112**, 63.
2 —— ibid., 1956, **113**, 565.
3 Bowes, H. A., ibid., 1956, **113**, 530.

Vaginitis

SIR,—In your annotation (*Journal*, January 19, p. 155) you rightly stress the increase in the incidence of non-bacterial vaginitis in recent years and the numerous chemicals which have been advocated for treatment. There is no doubt that, if reinfection is avoided, most patients get cured by one or other method of treatment in a shorter or longer time. The patient, however, wants treatment to be as short as possible, and for this to be achieved it is essential that (1) the partner be examined and treated if necessary; (2) the chemical used by the patient (whether in the form of tablets or vaginal pessaries, etc.) must be applied accurately, and this means after individual instruction—furthermore, the medicament must be used in the first instance every day between two menstrual periods and then continued for a week after each period until at least four months have elapsed since treatment was begun; (3) a reminder should be given that while under treatment the use of contraceptive jellies and creams should be avoided—this is because it is essential that the *p*H of vaginal secretions should remain reasonably constant and not be affected by the addition of substances used for contraception to those prescribed for the treatment of *Trichomonas vaginalis* and allied infections.—I am, etc.,

G. M. SANDES.

London, W.1.

SIR,—We have been very interested to read the letter of Dr. R. D. Catterall *et al.* (*Journal*, February 2, p. 287) regarding the treatment of trichomonas vaginitis, also that

due to *Candida albicans*, with oral trichomonicides such as aminitrazole. Their findings have been confirmed in all our cases thus treated; also in three cases of urethritis in the male due to the *Trichomonas vaginalis* in which there has also been no response whatever. We have come to the conclusion that these preparations are therapeutically valueless in the treatment of these conditions.—We are, etc.,

NEVILLE MASCALL. F. G. MACDONALD.
J. CHESNEY. R. BAKER.

London, W.C.2.

SIR,—We would like to support the opinion expressed in the letter from Drs. R. D. Catterall, E. M. C. Dunlop, and Eva Gallagher (*Journal*, February 2, p. 287) concerning the use of "an oral trichomonicide such as aminitrazole." In our clinic we have treated a small series of female patients suffering from trichomonas vaginitis with combined aminitrazole by mouth and local vaginal treatment as recommended. The *T. vaginalis* reappeared in the vaginal secretions after the completion of treatment in every case where follow-up was possible. These patients denied further sex contact after treatment, so that reinfection was unlikely as a cause of the reappearance of the *T. vaginalis*.—We are, etc.,

CLAUDE NICOL.
AIDAN REDMOND.

London, E.C.1.

Weight Trends During Pregnancy

SIR,—An important and not very uncommon cause of weight gain during pregnancy, not mentioned by Dr. A. M. Thomson and Mr. W. Z. Billewicz in their article (*Journal*, February 2, p. 243), is depression. Some mothers who are upset by an unwanted pregnancy react by over-eating and put on weight, the pathogenesis here being identical with that of simple obesity. The excess weight may persist after the birth unless the depression is dealt with. In such women the mother-child relationship is likely to be disturbed.—I am, etc.,

D. F. O'NEILL.

London, W.1.

Sign of Wind in Infants

SIR,—I was interested to read the letter by Dr. Jean McEwen (*Journal*, January 26, p. 229) regarding facial pallor and wind in infants. I recently saw two infants exhibiting facial pallor, which disappeared after eructation. One infant developed a typical attack of "three months' colic," with high-pitched scream, drawing-up of legs, and red congested facies. Approximately five minutes after the attack began I noticed a definite circumoral pallor, more marked over the upper lip, and thought it may have been due to vasoconstriction caused purely by mechanical stretching of the skin over the gums.

On observing another attack, also with pallor, I gently applied pressure to the cheeks, so releasing the tension on the circumoral skin, with resultant return of colour to the pallid area.—I am, etc.,

MALCOLM J. PHILLIPS.

Llantwit Major, Glam.

SIR,—In view of the interesting observation made by Dr. Jean McEwen (*Journal*, January 26, p. 229), I should like to record a personal observation in connexion with the diagnosis of "wind" in infants. The sign is a purely mechanical one and is comparable to the Hippocratic succussion splash which may be elicited in a case of hydropneumothorax.

To elicit the sign after a milk feed the baby is sat up on the observer's right knee facing his left. The baby is held upright between the observer's right hand, which is placed over the back of the baby's chest, and his left hand, which is placed over the lower part of the front of the baby's chest. The infant is now gently rocked towards and away from the observer. If there is "wind" to be brought up a sound not unlike that obtained when a glass of champagne is being poured will be easily audible. At times the sound produced is not dissimilar to the sound of waves lapping up against a boat. In the smaller infant who is unable to hold his head erect he can be made more comfortable during the manœuvre by supporting the chin between the thumb and index finger of the left hand.

The gastric succussion splash (as I have called it) is, of course, due to the splashing movement back and forth of fluid gastric contents made possible by the presence of the stomach gas bubble. Once eructation has occurred the sign cannot be elicited, and the absence of the succussion splash excludes the presence of "wind" in any significant amount. The sign should be elicited cautiously in the infant who tends to regurgitate more than the average amount with eructation.

The prime importance of the sign is in the prevention of "three-month colic," where it is essential to know whether there is any "wind" left before the baby is put down to sleep.—I am, etc.,

RONALD J. CANTWELL.

Brighton.

Bolus Obstruction

SIR,—Mr. R. J. Williams in his letter on bolus obstruction (*Journal*, February 2, p. 285) states that brussels sprouts have not been cited before as a cause of such obstructions. This brings to mind a case of lower small-bowel obstruction I saw about three years ago. On laparotomy and subsequent enterotomy the cause was found to be a brussels sprout more or less undigested. It may be of interest to note that this patient had previously had a partial gastrectomy of a full-width stoma type of operation performed.—I am, etc.,

B. N. COLABAWALLA.

Bradford.

Rupture of Hind-waters and Haemorrhage

SIR,—I see that two cases of infant death are discussed by Drs. J. K. Russell, D. F. Smith, and R. Yule (*Journal*, December 15, 1956, p. 1414), both being due to trauma of the placenta by a Drew Smythe catheter used to rupture the hind-waters. After the recording of the two cases the authors went on to elaborate on a test that may be done to differentiate between foetal and maternal blood. This seems a completely unnecessary elaboration of what should be a straightforward procedure. Would it not be more simple to suggest that the Drew Smythe catheters be withdrawn from service and rupture of the fore-waters be substituted when surgical induction of labour is contemplated? In the hospital with which I am associated 112,000 babies have been delivered in the past thirty years without a recorded loss of infant life due to such an accident—the point being that no Drew Smythe catheters are used.—I am, etc.,

THOMAS PRIMROSE.

Montreal.

Rheumatic Carditis

SIR,—Everyone who has been interested in the institutional care of children with rheumatic carditis will be interested in Professor N. B. Capon's article on the subject (*Journal*, February 9, p. 335).

What is missing from any article that I have read on this subject is the results of any organized follow-up of these important cases into later life. Such centres as London and Liverpool must surely have unique facilities for inquiring into the subsequent life histories of these patients.—I am, etc.,

MARTIN O. RAVEN.

Broadstairs.

Cricket

SIR,—The B.M.A. *v.* Law Society cricket match this year will take place at Hurlingham on Sunday, May 26. In order that the B.M.A. XI should be truly representative I would be very grateful if members interested in cricket would write to me, recommending the names of fellow-members whom they consider ought to play in this side. There are, I know, many doctors playing first-class club cricket who do not like to put themselves forward because they are too modest but who would be only too pleased to play if invited.—I am, etc.,

P. C. RUSHTON.

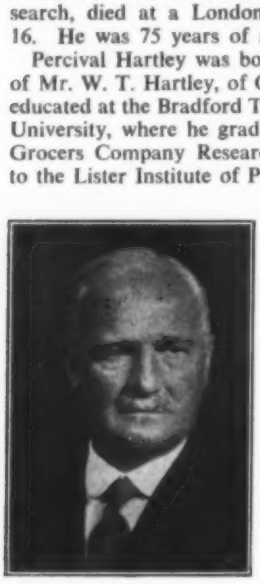
91, Warren Road,
Worthing, Sussex.

Obituary

Sir PERCIVAL HARTLEY, C.B.E., *M.C.*, D.Sc., F.R.S.

Sir Percival Hartley, formerly director of biological standards at the National Institute for Medical Research, died at a London nursing-home on February 16. He was 75 years of age.

Percival Hartley was born on May 28, 1881, the son of Mr. W. T. Hartley, of Calverley, Yorkshire, and was educated at the Bradford Technical College and at Leeds University, where he graduated B.Sc. in 1905. With a Grocers Company Research Scholarship he then went to the Lister Institute of Preventive Medicine, where he was from 1906 to 1908. In 1909 he obtained the London D.Sc., and in the same year went to India to join the staff of the Imperial Bacteriological Laboratory at Muktesar, in the United Provinces. He returned to the Lister Institute from India in 1913, but left during the first world war to serve as a captain in the R.A.M.C. from 1915 to 1919, being awarded the Military Cross in 1917. After demobilization he spent two years at the Wellcome Physiological Research Laboratories and then, in 1922, joined the staff of the National Institute for Medical Research. There his work gained him the William Julius Mickle Fellowship of the University of London in 1927. His achievements there were further recognized when, in 1936, he was appointed C.B.E., and by his election the next year to the Fellowship of the Royal Society. In 1944, two years before he left the National Institute, he was created a knight for his work in connexion with the development of penicillin for medical use. While at the National Institute he was appointed to the responsible post of director of biological standards. He continued his research work as a Wandsworth Fellow at the London School of Hygiene and Tropical Medicine from 1946 to 1948; at the Sir William Dunn School of Pathology, Oxford, in 1948–9; and at the Lister Institute again from 1949 to 1953. He was a member of the British Pharmacopoeia Commission from 1933 to 1948 and of the Medical Research Council from 1949 to 1953. In 1948 the University of Leeds conferred on him the honorary degree of D.Sc. He married Miss Olga Parnell in 1920. Lady Hartley died in 1950, and he is survived by the two daughters of the marriage.



Professor A. A. MILES, Director of the Lister Institute of Preventive Medicine, writes:

Percival Hartley's outstanding qualities are perhaps best appreciated against a background of biological standards, because they fitted him admirably for work in the important field that he made peculiarly his own. To it he brought enthusiasm, devotion, extreme care in bench work, and a determination to fight for principles. The many immunological standards that Hartley made, and the methods he devised for doing so, have been models for the rest of the world and the principles of standardization on which he worked a part of the canon. He never tired of preaching these and became impatient only when he thought they were wilfully ignored. I remember a conference on the standardization of a drug at which a visiting expert defended certification of all batches without test on the recommendation of a committee, and, while Hartley chafed, detailed the qualifications of each eminent committee member. Hartley, leaping up, exploded with, "I don't care if you have Matthew, Mark, Luke, and John on it, what they are doing isn't standardization." He had little respect for mere authority and would protest to anyone he thought was violating either scientific principles or his own firm principles of decent behaviour. A diffident man, he would worry for some time about what form his protests should take, but he never hesitated to make them.

Hartley was an admirable teacher of his own subject, and no one ever acquired a shoddy technique from him. He was modest about his researches, but justifiably realized their value, especially his work on diphtheria immunity and on the effect of species differences, or refining techniques on the protective and sensitizing action of antibody. He was wont, a little slyly and perhaps a little wryly, to say that he was chiefly known for "Hartley's broth." But he will be remembered for much else in the science of immunology and for his integrity and charm—and remembered with the affection that can be inspired only by a kindly and devoted man.

Dr. D. A. LONG writes:

Sir Percival's standing as man and scientist will be acknowledged by those of his contemporaries all over the world who shared with him in the real achievements of the League of Nations and later the World Health Organization. More than anyone else he was responsible for the introduction of the international biological standards, and he never tired of describing the contributions, direct and indirect, that they have made to research. The scientific world will mourn the passing of a Fellow of the Royal Society. The medical practitioner will remember the man who fought long and effectively to eradicate diphtheria. Lady Hartley shared in his research in this field, and Sir Percival used to boast that his wife taught him all he knew in this branch of immunology.

The things of which he would boast were few—his family, the achievements of his country in international medicine, the National Institute for Medical Research, his assistants, his pride at being an Englishman. He never boasted of his own achievements. One story will suffice to show his selflessness and humility. As a young man he had accepted a major chair at an English university, but as the time of his appointment approached he asked for it to be given to another; his reason was that he felt that he could not fill it adequately. This was the only instance in which I knew his judgment to be false. He could unite a group of temperamental, even disagreeable, individuals into a team by the affection they felt for him. His enthusiasm for his subject was intense. He taught well and with great simplicity. He loathed shoddy technique, and one of his favourite sayings was, "A man is as good as his methods." No man could have been more kind to his juniors, and as the number of people who had served under him mounted with the years so the respect and affection in which he was held also increased.

Possibly the most remarkable thing about Sir Percival was his courage. He was a very sensitive man. Sometimes his simplicity and youthful enthusiasm—for he remained a young man all his life—led him to be the victim of the cynical and sophisticated scientist. On such occasions he was easily and deeply wounded. In spite of all his honours he was unconscious of his own ability, and worried a great deal even if he had to give a lecture to students. A shy man, he turned to his family for encouragement and support. Though he survived his wife for some years, he never fully recovered from her death. Those of us whom he taught will remember him in the techniques we use each

day at the laboratory bench. I shall always think of him when I read in *King Henry VIII* the King's tribute to Cranmer: "This good man—few of you deserve that title."

Mr. HARRY COOPER

It is with much regret that we record the death on February 14 of Mr. Harry Cooper, official reporter to the *British Medical Journal*. Mr. Cooper was 76 years old, and had been in ill-health for the past five years. Harry Cooper left school at the age of 15 and entered the office of a coal merchant and cornchandler in Boston, Lincolnshire. He taught himself in his spare time, among other things learning shorthand. At the age of 20 he went to London and was employed by the Amalgamated Press. He joined the Camera Club and began to report for the Röntgen Society, now the British Institute of Radiology, thus beginning a connexion with the medical profession that grew as the years went by and earned him the gratitude and respect of a large number of medical men both within the British Medical Association and in the numerous medical societies that sought Cooper's help. In 1907 he reported the Section of Radiology at the Annual Meeting of the Association in Exeter, and the then editor of the *Journal*, Dr. (later Sir) Dawson Williams, quickly appreciated Cooper's qualities. Cooper helped in the reporting of the meeting of the Association in Sheffield in 1908, and in 1909 accepted the position as reporter to the *British Medical Journal*, a position he held until his death.

For nearly 50 years Mr. Harry Cooper has been responsible for reporting the Annual Representative Meeting of the B.M.A., the proceedings of the Council and of its committees, and some of the scientific sections of the Annual Meeting and of the Royal Society of Medicine. He had an amazing capacity for concentrating his whole attention on the work he was doing, and this absorption in his task made him in time as familiar with medical terminology as were the speakers he reported. Cooper's "copy" was so excellent that it could go straight to the printer without much more attention than a few straight "cuts" to adjust it to the limitations of space. No pains were too great for him to achieve accuracy and conciseness, and no call for help in reporting was ever too late in the day. Over the years he acquired a remarkable knowledge of the medical profession and its personalities, and for all his modesty and self-effacement he was not slow in measuring a man's worth. Three editors of this *Journal* learned just how valuable were these qualities of mind and of character, and as time went on Cooper's developing ability as a journalist found increasing application in the writing of memoirs of the eminent, of leading articles on general topics, of concise summaries of voluminous official reports. His writing was lucid and direct and free from the cliché and the overworked phrase. Although, as one became aware, the *Journal* was first in his affections, Cooper's activities as a reporter and journalist spread far beyond it. Before the war, for example, he used to report matters coming before the annual assemblies of the League of Nations and the International Court at The Hague. His working day must have been as full as that of the busiest general practitioner.

Harry Cooper was a deeply religious man whose modesty was as much a part of himself as was his natural courtesy of manner. His finely tempered mind enabled him to outstrip the handicaps of his early education, and he looked upon his work as as much a contribution to something he valued as a way of earning a living. He was a most unusual man, and nothing would have surprised him more than to be told this.

Medical Notes in Parliament

Chronic Rheumatism

The MINISTER OF HEALTH was asked by Mr. P. COLLICK (Birkenhead, Lab.) what was the estimated number of people in Britain suffering from rheumatism, arthritis, and kindred diseases, and what was the proportion of the population. He stated on February 13 that precise figures were not available, but surveys in particular areas and other evidence suggested that the rate of incidence of the chronic rheumatic diseases might be between 2 and 4% of the population per annum.

Prescriptions for Skin Complaints

Mr. PHILIPS PRICE (Gloucestershire, West, Lab.) asked the Minister of Health whether he was aware that in dermatological clinics the average prescription requiring more than one preparation was higher than any other type of clinic; and whether, in view of the heavy burden that this put on patients suffering from skin trouble in comparison with other types of cases, he would abolish making a charge of 1s. on all items in excess of a certain figure. Mr. D. VOSPER, replying on February 12, said his information was that there was some tendency for the average number of items for these prescriptions to be higher than the general average; but he was not satisfied that any special action was needed in addition to the existing arrangements to give assistance when it was required.

Poliomyelitis Vaccinations

Mr. B. JANNER (Leicester, North-west, Lab.) asked the Minister of Health on February 14 how many children had now been vaccinated against poliomyelitis since this method was put into effect; what report on the new batch of vaccine he had received from the Medical Research Council; and what reasons had they given in support of their views. Mr. VOSPER said the number was approximately 178,000. The report on the first batch of vaccine expected this year stated that it had passed all tests for freedom from active poliomyelitis virus and for potency, but that it failed to reach the required standards of purity. Tests on a second batch were still in progress.

Multi-racial Hospitals

Mrs. LENA JEGER (Holborn and St. Pancras, South, Lab.) asked the Secretary of State for the Colonies how far it was his policy to encourage hospital development in the colonies on a multi-racial basis. Mr. A. LENNOX-BOYD stated on February 13 that the development of "group" or multi-racial hospitals in the territories was encouraged so far as religious beliefs and social customs permitted, but the basic aim was to produce an efficient hospital service acceptable to the inhabitants.

Composite Packs

Mr. NESS EDWARDS (Caerphilly, Lab.) asked the Minister of Health on February 18 what were the composite

packages now issued on one prescription, and whether any further composite packages had been proposed by the British Medical Association. Mr. VOSPER informed him that the following sets of apparatus or dressings, each of which included two or more articles, might be ordered as one prescription: atomizer, colostomy apparatus, douche, hypodermic syringe, smog mask, multiple pack dressing, perfusion fittings, suprapubic belt, Higginson's enema syringe, urine sugar analysis set, vaporizer. He said he was still awaiting the views of the Association on further packs.

Radiation Dangers

Mrs. E. HILL (Manchester, Wythenshawe, Con.) asked whether the Minister of Health could make a statement on the technical and administrative steps taken to reduce the amount of radiation from hospital and other radiology units; and, in view of the increased evidence of the danger of leukaemia and of general hazard to health arising from radiation, what steps were being taken to ensure that patients received strictly limited and not indiscriminate or repeated exposure when undergoing *x*-ray examination. Mr. VOSPER stated that radiologists and other members of the medical profession were well aware of these hazards, and he could not accept the implication that patients were exposed indiscriminately or unnecessarily to radiation. The whole question was, however, under review by a committee under the chairmanship of Lord Adrian, and any further action must await its report.

Increased Contributions to N.H.S.

In a statement on February 19 Mr. PETER THORNEYCROFT, Chancellor of the Exchequer, spoke of the savings in civil expenses to be concurrent with the expected saving in defence. The price of welfare milk is to be increased to 4d. a pint and the charge for school meals by 2d. to 1s. When the National Health Service was first introduced it was expected to cost £175m. a year. In 1957–8 the total cost of the Service would be £690m. Towards this a sum of £40m. would come from the contributions from the National Insurance fund (which collected 10d. from an adult man every week), £100m. from other receipts, including charges to patients, and the balance of £550m. from general taxation. It was proposed to increase National Insurance contributions by 10d. for an adult man and proportionate sums for women and juveniles. The employer would pay the same proportionate share as he did now. The purpose was to establish a separate National Health Service contribution towards the cost of the Service, and the results of the increase would be that the contributory element next year would rise from one-seventeenth to one-ninth of the total cost of the Service. It would provide an additional £40m. for the Chancellor in a full year.

Welfare of the Handicapped.—The Minister of Health is to reconstitute the Advisory Council for the Welfare of Handicapped Persons on April 1 as an advisory committee to advise him on questions relating to the health as well as the welfare of the handicapped. It is hoped to hold the first meeting of the new committee in April.

Medico-Legal

POLICE EVIDENCE PREFERRED

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

On February 11 Robert King, a Stranraer general dealer, was prosecuted before the Ayr Sheriff Court[1] for driving a car while under the influence of drink to such an extent as to be incapable of having proper control over it, and for careless driving and failure to stop after an accident.

King, who had bought the car for £8 and later sold it for scrap for £5, said that on the evening in question he was driving in search of his wife, who had left him. He had had one drink of beer in an Ayr public house. The evidence for the prosecution was that his car had swerved and caused a van to mount the verge of the road; had gone round two corners on its wrong side; had collided with a taxi; had ignored diversion signs and gone down a road under repair; had zigzagged down a street, making people run to safety; and had reversed into a cul-de-sac and crashed into a hedge and railings.

King was arrested, and was examined by the police doctor, Dr. R. L. Leask. Dr. Leask, who was medical officer of health for Ayr and had 20 years' experience as police doctor, certified that, though King smelt of alcohol and at one point during the examination staggered slightly, he was not unfit to drive. In spite of this the sheriff-substitute, Mr. James Frame, convicted him after hearing the facts about his driving and the opinions of a police inspector, two sergeants, and two constables as to his condition. The depute procurator-fiscal observed that in spite of Dr. Leask's "failure" to certify King as unfit to drive he had the evidence of policemen of experience who would not let him leave the police station, and "no policeman would be likely to detain a man, knowing the rights of the subject in this country."

The sheriff-substitute relied on the "expert" evidence of the five policemen, in preference to the view of Dr. Leask, who had said after a full examination that in his opinion it was not even a borderline case. Some short time must have elapsed between King's arrest and the doctor's examination, so the police had the advantage of him there, and no doubt the driving described in the prosecution evidence required explanation. But, as the agent who appeared for the defence said with some force, there seems to be little purpose in asking accused persons to undergo a test by the police doctor if, when the result is favourable to the accused, the prosecution can disregard it and ask the court to convict on the visual evidence of laymen.

King was sent to prison for 30 days and fined £20 for careless driving and failing to stop, and was disqualified from driving for three years.

[1] *Scotsman*, February 13, 1957.

Universities and Colleges

UNIVERSITY OF OXFORD

In Congregation on December 15, 1956, the following degrees were conferred:

B.M.—G. H. Fowler, D. C. S. Hutchison, A. J. Pemberton, M. S. Whitehouse, H. G. Nicol, W. D. Stone, E. D. A. Hay, Y. E. Hsia, S. R. Richardson, E. W. Sturton, J. B. Dawson, B. A. Roper, E. M. Swannie, T. Osborn, F. P. Greenwell, R. D. Last, R. C. Poynte-Wright, J. B. Sayer, T. P. Snell, G. C. Rivett, M. W. B. Bradbury, R. L. Buchanan, D. N. Croft, P. F. Binnion, P. S. H. Browne, C. B. Clay, R. W. Griffith, J. R. Cousins, D. R. Laney, Joyce I. A. Little, Rosemary E. Troughton.

Dr. R. G. Eager has been appointed representative of the University on the governing body of Burford Grammar School, in place of Mr. H. A. Smith, until September 1, 1958.

Dr. W. H. Taylor has been elected to an Official Fellowship at St. Peter's Hall, as Tutor in Natural Science from October 1, 1957.

UNIVERSITY OF CAMBRIDGE

In Congregation on January 26 the following degrees were conferred:

M.D.—J. B. Lyon, N. B. Malleson.

M.B., B.CHIR.—*G. Screech, *C. Cohen, *E. W. Lord, *F. B. Grossmark, P. H. W. Sheard, *S. J. M Fernando, St. J. Dowling, *M. K. T. Valentine, *P. G. C. Beney, F. K. Amarquaye, D. B. Hill.

M.B.—R. J. Rushton, D. H. Hull, *A. E. H. Mence, G. A. Irving, *B. H. Gooch, W. E. Ince, *H. M. Melville, *Patsy J. M. Lachelin, *Gillian A. Watson, *Marguerite A. M. von Bergen.

Dr. J. D. Lever has been elected into a Fellowship of Trinity College, on appointment as College Lecturer in Anatomy.

*By proxy.

UNIVERSITY OF LONDON

The following degrees were awarded by the Senate on December 19, 1956:

M.D.—R. Goulding, H. R. C. Riches

M.S.—S. M. Chris, E. M. Elmhirst.

The degree of M.D. was awarded by the Senate on January 30 to P. H. Connell and J. G. P. Hutchison.

Professor J. M. Mackintosh has been appointed a representative of the University on the governing body of the London School of Economics and Political Science.

Professor R. W. Scarff has been appointed the representative of the Board of Studies in Pathology on the Board of the Faculty of Medicine for 1957.

The following have been recognized as teachers of the University in the subjects indicated in parentheses: *Postgraduate Medical School of London*, Dr. B. E. Heard and Dr. A. G. E. Pearse (Pathology). *Institute of Ophthalmology*, Mr. S. J. H. Miller (Ophthalmology). *Institute of Diseases of the Chest*, Dr. F. J. Prime (Medicine). *Charing Cross Hospital Medical School*, Mr. N. C. Tanner (Surgery) and Dr. J. F. D. Frazer (Physiology). *St. Mary's Hospital Medical School*, Dr. Victor Wynn (Chemical Pathology) and Dr. R. F. Mottram (Physiology).

UNIVERSITY OF WALES

At a Degree Congregation held at Cardiff on January 12 the following degrees were conferred:

M.B., B.Ch.—D. J. W. Anderson, D. Davies, A. E. Dudley, E. G.-H. Edmunds, Gwenda Harcombe, I. H. Horn, C. D. Jones, H. V. R. Jones, Margaret Jones, Thelma Lancaster, B. R. Lewis, D. N. D. Lewis, H. B. Lewis, Olwen G. M. Rees, J. H. Thomas.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examination indicated:

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—J. A. Attard, F. P. Brown, J. J. Y. Ch'Uai, B. Das, G. S. Dhaliwal, Nishat Fahmy, K. N. Ghose, Mehar Q. Hasan, H. Hollis, T. J. G. Howie, A. Larizo, Yvonne G. R. Mahabir, M. Masuduzzaman, P. N. Mehrotra, G. A. Parsons, F. Rahim, A. Z. Rizavi, S. Sen, A. K. Shakir, O. P. Sharma, P. N. Sharma, Premila Singh, S. Sukondhamana, C. R. W. Turner.

In Congregation on December 14, 1956, the following degrees were conferred:

M.D.—J. Ainsworth, N. Coulshed, J. A. Donnellan, J. F. Foulkes, D. Helbert, E. S. Watkins.

M.Ch.Orth.—R. M. Bhansali, J. C. N. Joshipura, A. H. McKenzie, R. B. J. Peiris, A. E. Pritchard, S. K. Roy, W. A. L. Thompson.

M.B., Ch.B.—Stella R. Alsop, J. L. Bowmer, P. G. Bullough, G. G. Copeland, H. W. C. Davies, H. J. P. Diggory, H. Gordon, H. G. P. Jones, Zoë Kenyon, W. W. Littler, Eileen M. Millward, Mary W. Pritchard, F. Richards, N. G. Roberts, P. F. Teebay, A. J. Williams, Margaret V. Wilson.

The following candidates have been approved at the examinations indicated:

M.B., Ch.B.—*Passed in separate subjects*: W. G. Clayton (Medicine and Surgery).

DIPLOMA IN PUBLIC HEALTH.—*Part I*: Frances Allan, G. W. Danger, L. H. Duthie, P. H. Grace, T. L. Hobday, P. G. Holt, Marie T. Hyde, Brenda Jones, A. L. Kirkland, Margaret M. Lewis, Dora Marren, J. E. O'Malley, D. C. Pattison, D. P. W. Roberts, W. G. Timmis, Mary P. K. Williams. *Part II*: W. A. Jones, B. J. Kelly, N. T. W. Pover.

QUEEN'S UNIVERSITY OF BELFAST

At a graduation ceremony on December 21, 1956, the following degrees were conferred:

PH.D.—*In the Faculty of Medicine*: John Bowden.

M.B., B.Ch., B.A.O.—S. W. Agnew, W. A. Beck, J. P. Bradley, S. S. Brown, G. J. Cole, M. D. L. Eakin, E. T. T. Hu, H. R. McGaughey, R. M. H. Malone, J. Noble, J. P. Savage, Y. E. Shirazi.

UNIVERSITY OF BRISTOL

The dissertations submitted by the following candidates for the degrees indicated have been approved:

M.D.—D. R. Coles, C. H. Gurd, Lisa E. Hill, R. Hill.

PH.D.—*In the Faculty of Medicine*: S. M. A. Zaidi.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The following were admitted to Membership of the College on February 1:

Elizabeth A. A. Awoliyi, W. D. Linehan, R. J. P. Skelly.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At the meeting of the Council of the College held on January 26, with the President, Sir Charles Read, in the chair, the following were elected to Membership of the College:

D. C. Aird, G. B. Batchelor, R. A. T. Boland, G. D. D. Cable, M. I. Cassimjee, J. S. W. Chambers, P. K. Choudhuri, C. A. B. Clemetson, K. I. Digwood, A. Freier, W. J. Garrett, W. Gault, W. Gavin, I. Goldman, C. J. Goosen, B. Kirsch, Margaret A. Lakeman, E. W. Lillie, H. H. McCrostie, J. G. Marks, A. E. B. Matthews, T. T. E. Michael, A. B. Miller, A. K. Mitra, Jessie M. B. Muirhead, A. G. Muttuthamby, A. B. L. Peake, A. C. C. Pinion, L. J. Rice, R. Richards, T. J. Ryan, G. J. W. Stump, S. M. Thanevala, K. F. G. Wilson, R. Yule.

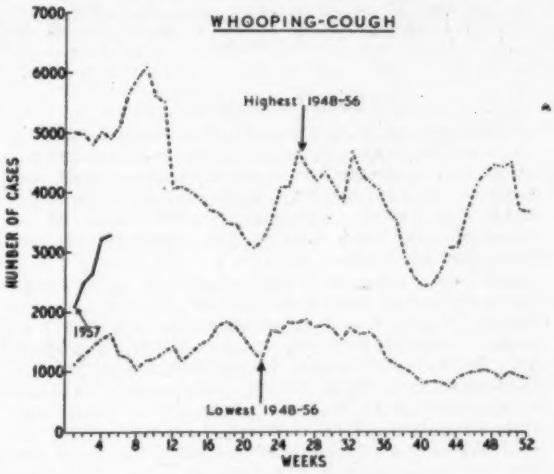
ROYAL FACULTY OF PHYSICIANS AND SURGEONS

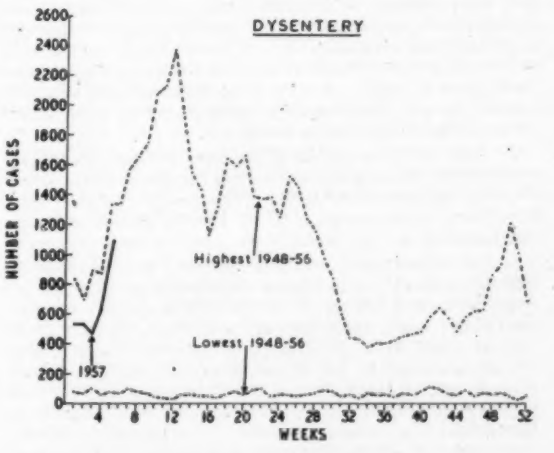
At a meeting of the Faculty held on January 7, with Professor Stanley Alstead, President, in the chair, the following were admitted Fellows of Faculty: N. K. Barber and G. C. Robin.

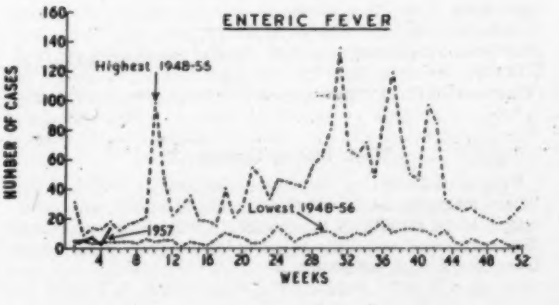
Vital Statistics

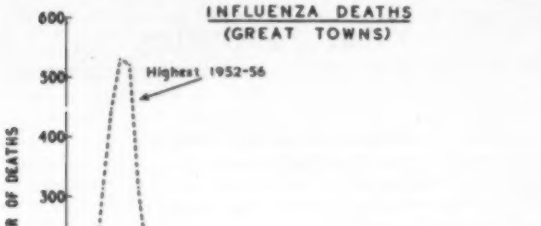
Graphs of Infectious Diseases

The graphs below show the uncorrected numbers of cases (deaths for influenza) of certain diseases notified weekly in England and Wales (great towns for influenza). Highest and lowest figures reported in each week during the years 1948–56 (influenza, 1952–6) are shown thus ------, the figures for 1957 thus ———. Except for the curves showing notifications in 1957, the graphs were prepared at the Department of Medical Statistics and Epidemiology, London School of Hygiene and Tropical Medicine.









Infectious Diseases

In England and Wales during the week ending February 2 a rise in the number of notifications of most infectious diseases was recorded. The largest rises were 3,481 for measles, from 9,527 to 13,008, 462 for dysentery, from 635 to 1,097, 89 for acute pneumonia, from 572 to 661, 69 for whooping-cough, from 3,233 to 3,302, and 36 for scarlet fever, from 829 to 865.

The largest increases in the incidence of measles were 633 in Lancashire, from 2,304 to 2,937, 310 in Essex, from 803 to 1,113, 289 in London, from 682 to 971, 278 in Durham, from 810 to 1,088, 277 in Middlesex, from 224 to 501, 271 in Yorkshire West Riding, from 484 to 755, 223 in Cheshire, from 259 to 482, 171 in Staffordshire, from 215 to 386, 144 in Kent, from 104 to 248, 128 in Oxfordshire, from 87 to 215, and 121 in Surrey, from 404 to 525; the only large fall was 121 in Lincolnshire, from 264 to 143. The largest fluctuations in the returns of whooping-cough were an increase of 42 in Kent, from 208 to 250, and a fall of 46 in Suffolk, from 99 to 53. The only large variations in the number of notifications of scarlet fever were a rise of 30 in London, from 47 to 77, and a fall of 44 in Shropshire, from 47 to 3. 5 cases of diphtheria were notified, 4 more than in the preceding week, and 2 of these cases were notified in Birmingham C.B.

37 cases of acute poliomyelitis were notified, and these were 7 more for paralytic and 3 more for non-paralytic cases than in the preceding week. The largest returns were Lancashire 5 (Liverpool C.B. 2), London 4 (Islington 2), Southampton 4.

A rise in the incidence of dysentery was general throughout the country. The largest local increase was 127 in Accrington M.B., from 4 to 131. The largest returns, during the week, were Lancashire 299 (Accrington M.B. 131, Stretford M.B. 85, Liverpool C.B. 14), Warwickshire 121 (Coventry C.B. 66, Birmingham C.B. 40), Yorkshire West Riding 96 (Sheffield C.B. 21, Bradford C.B. 20, Worsborough U.D. 15, Leeds C.B. 13), London 80 (Islington 14, Lewisham 11), Nottinghamshire 72 (Arnold U.D. 47, Nottingham C.B. 19), Yorkshire East Riding 52 (Kingston-upon-Hull C.B. 41), Durham 41 (Gateshead C.B. 14), Northumberland 32 (Blyth M.B. 13, Alnwick U.D. 12), Middlesex 29 (Tottenham M.B. 9), Oxfordshire 25 (Oxford C.B. 24), Leicestershire 22 (Hinckley U.D. 14), Essex 21 (Thurrock U.D. 11), Carmarthenshire 21 (Kidwelly M.B. 21).

Week Ending February 9

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 869, whooping-cough 3,148, diphtheria 9, measles 16,752, acute pneumonia 720, acute poliomyelitis 34, dysentery 1,290, paratyphoid fever 5, and typhoid fever 6.

INFECTIOUS DISEASES AND VITAL STATISTICS

Summary for British Isles for week ending **February 2** (No. 5) and corresponding week 1956.

Figures of *cases* are for the countries shown and London administrative county. Figures of *deaths* and *births* are for the 160 great towns in England and Wales (London included), London administrative county, the 17 principal towns in Scotland, the 10 principal towns in Northern Ireland, and the 14 principal towns in Eire.

A blank space denotes disease not notifiable or no return available.

The table is based on information supplied by the Registrars-General of England and Wales, Scotland, N. Ireland, and Eire, the Ministry of Health and Local Government of N. Ireland, and the Department of Health of Eire.

CASES in Countries and London	1957					1956				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria ..	5	0	2	0	5	11	3	2	0	8
Dysentery ..	1,097	80	195	6	1	1,325	125	147	11	4
Encephalitis, acute	2	0		0		5	0		0	
Enteric fever:										
Typhoid ..	3	0	0	0	3	4	0	0	0	2
Paratyphoid ..	10	1	0	0		1	0	2	0	
Food-poisoning ..	181	38	35	1		164	21		55	
Infective enteritis or diarrhoea under 2 years				10	24				17	7
Measles*	13,008	971	494	451	316	2,425	26	56	23	41
Meningococcal infection	32	1	15	0		25	1	16	2	2
Ophthalmia neonatorum	21	1	2	0		18	0	8	0	
Pneumonia† ..	661	41	300	15	4	941	65	334	10	4
Poliomyelitis, acute:										
Paralytic ..	28	3	7	1	4	25	3	1	1	
Non-paralytic ..	9	1				12	0			
Puerperal fever§ ..	234	47	11	0		261	41	6	1	
Scarlet fever ..	865	77	83	34	22	949	33	103	25	11
Tuberculosis:										
Respiratory ..	631	73	124	14		679	90	113	17	
Non-respiratory	87	7	14	4		67	6	14	4	
Whooping-cough..	3,302	173	502	19	67	1,621	77	96	82	221

DEATHS in Great Towns	1957					1956				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria ..	0	0	0	0	1	0	0	0	0	0
Dysentery ..	1	0		0		0	0		0	
Encephalitis, acute		0			0		0			0
Enteric fever ..	0	0	0	0		0	0	0	0	
Infective enteritis or diarrhoea under 2 years	9	1	2	0	1	8	0	1	0	0
Influenza	21	0	1	1	1	45	3	4	0	2
Measles		1	1	0	1		0	0	0	0
Meningococcal infection		0	1				0	2		
Pneumonia ..	327	60	23	15	7	402	69	42	14	12
Poliomyelitis, acute	1	0			0	1	0	1		0
Scarlet fever ..		0	0	0	0		0	0	0	0
Tuberculosis:										
Respiratory ..	56	7	14	4	1	104	15	18	2	9
Non-respiratory		0	0	0	0		1	1	0	0
Whooping-cough..	1	0	0	0	0	1	0	0	0	0
Deaths 0–1 year ..	251	38	38	8	8	220	30	35	4	9
Deaths (excluding stillbirths) ..	5,986	828	692	147	171	6,735	988	825	111	214
LIVE BIRTHS ..	7,970	1167	1003	181	446	6,945	1044	915	205	339
STILLBIRTHS..	228	31	25			205	17	28		

* Measles not notifiable in Scotland, whence returns are approximate.
† Includes primary and influenzal pneumonia.
§ Includes puerperal pyrexia.

LATE PARLIAMENTARY NEWS

After the printing of the JOURNAL *had begun we received the following Parliamentary report:*

The PRIME MINISTER announced on February 20 that the whole question of medical remuneration is to be referred to a Royal Commission. He said that the claim for a 24% increase in the remuneration of doctors in the Health Service would mean an extra cost to the country of about £20m. a year, and in present circumstances the Government did not feel able to admit that claim. "This does not mean that the Government has reached any conclusion as to the merits of the claim." They decided that the time "was opportune for a full review of medical remuneration from an independent inquiry, which would look into the remuneration of the medical profession in relation to other professional classes in the community and would suggest how the matter could be kept under review. I have accordingly recommended to the Queen, and Her Majesty has approved, that a Royal Commission be appointed for this purpose." He added that within the last few days a similar claim had been received on behalf of the dental profession, and that the dental profession would be included in the review. The question whether the remuneration of doctors and dentists employed by local authorities should be included was under consideration. The names of the members and terms of reference of the Royal Commission would be announced later.

Mr. H. GAITSKELL, Leader of the Opposition, immediately asked how long this review was expected to take, if it was to be in the nature of an arbitration tribunal on the claim. Would the terms of reference include specialists as well as general practitioners, and would it have the power to recommend back-dating the award if there was one? Mr. MACMILLAN said the Commission would be able to recommend that any award and proposals should be retrospective. The review would include specialists. But as regards the character of the Commission, he thought that would be best set out in detail when he could announce the names and terms of reference. He thought it was generally agreed that it would be a good thing if the relations of this profession with other professions could be established and if some satisfactory system could be adopted by which reviews could be carried out from time to time.

Mr. HERBERT MORRISON (Lewisham, South, Lab.) described this as a very doubtful way of seeking to settle the remuneration claim. He recalled that the Spens Committee in similar circumstances landed the country into expenditure and repercussions which had been embarrassing. Mr. MACMILLAN said this was a difficult problem, and he felt that the work of the Royal Commission on the Civil Service—similar but not exactly parallel—had been to advantage, and if some equally good results could follow from this Royal Commission he thought it would be generally acceptable.

Mr. G. NABARRO (Kidderminster, Con.) asked the Prime Minister to make it clear that a primary purpose of the review should be to eliminate all the legal and other uncertainties that had arisen from the Spens Report and Danckwerts award. Mr. MACMILLAN said one purpose of the Commission would be to clear up this situation and lay down a system which through the years would be more workable and more acceptable.

Dr. EDITH SUMMERSKILL (Warrington, Lab.) said this was virtually a repudiation of the Spens Reports and asked what the reaction of the professional organizations was to this suggestion. Mr. MACMILLAN said that the discussion between representatives of the profession and the Minister of Health was one matter. To-day he had confined himself to the announcement of the appointment of the Commission. Detailed questions had better be left to the Minister responsible.

MEETINGS TO BE CALLED

Immediately after receiving the above report the Negotiating Committee met at B.M.A. House. It was decided to summon at once meetings of the constituent bodies of the Committee. The Council of the B.M.A. is to meet next week. The Negotiating Committee authorized the dispatch to the Prime Minister of a personal letter signed by Sir Russell Brain and Dr. A. Talbot Rogers, joint chairmen of the Committee.

Medical News

Hunterian Society.—The annual dinner to commemorate John Hunter's birth was held in London on February 14, with the president of the Society, Dr. CECIL COYLE, in the chair. It was the 229th anniversary. The dinner was also a double jubilee. It was fifty years ago that a Lord Mayor of London first attended the commemoration dinner, and the presence at the High Table of this year's Lord Mayor, Sir CULLUM WELCH, with the LADY MAYORESS and the Serjeant-at-Arms, Commander JOHN POLAND, attested to the Society's traditional links with the City. The other jubilee was of the first admittance of ladies. Indeed, at this year's dinner, so fast have times altered and prejudices softened, there seemed more women than men in the large gathering. To mark the day—it was St. Valentine's too—the last speech of the evening was entrusted to a lady, Miss ROSE HEILBRON, Q.C., Recorder of Birmingham. After the Loyal Toasts and the "immortal memory" had been honoured, LORD LUKE, proposing the health of the Society, neatly epitomized the reason for John Hunter's continuing influence: "His life," he said, "was a challenge to worn-out theories." Dr. COYLE in his reply spoke of the Society's tradition of "informal but serious thought" which enlivened their clinical meetings. Two honorary fellows had been elected this year, he said—Sir Robert Young and SIR JOHN WEIR. "The Lord Mayor and the Corporation of the City of London" was proposed in a speech of quicksilver wit by Dr. MACDONALD CRITCHLEY, himself the Master of a City Company (the Apothecaries), as the Lord Mayor was quick to note in his reply. The Hunterian Society, said Sir CULLUM WELCH, had been born and bred in the City. It was renowned for its addiction to meeting in the taverns there. Replying to Mr. IAN ROBIN'S toast of "The Guests and Kindred Societies," Miss HEILBRON expressed her special pleasure at being at the dinner, not only on account of the close and usually most happy relationship that existed between Medicine and the Law, but also for personal reasons as the wife of a doctor. She complimented the Society—and the medical profession generally—on their forward-looking attitude to women. "Even at this dinner," she said, "the ladies have the last word."

Leverhulme Associates of R.S.M.—The council of the Royal Society of Medicine invites applications for the one hundred Leverhulme associateships which are available each year thanks to the generosity of the Trustees of the Leverhulme Trust Fund. The associates enjoy nearly all the privileges of the Society's fellows but without paying any subscription. The scheme started a year ago, and is intended for the holders of full-time clinical or non-clinical teaching or research appointments in medical, dental, or veterinary departments of British universities whose total income from academic or professional sources does not exceed £1,500 a year. Awards are made for one year in the first instance but may be extended annually up to a maximum of three years. Most vacancies are filled in the last week of March, for the year beginning April 1, so candidates are advised to apply between March 1 and 15, though applications may be made at any time. Application forms may be obtained from the deans of medical schools or the secretary of the Royal Society of Medicine, 1, Wimpole Street, London, W.1.

Mentally Handicapped in Scotland.—Local authorities have been asked by the Department of Health to ascertain the number of mentally handicapped in their areas needing care and guidance. This is recommended in a circular on the welfare of the mentally handicapped. The circular also

draws attention to the need to encourage voluntary effort in this field and for the provision of occupation centres, aftercare hostels, and clubs. So far out of the fifty-five local health authorities in Scotland only two have provided occupation centres suitable for both school-age and adult mental defectives.

Royal College of Surgeons.—The College council, at a meeting on February 14, agreed to the holding of a primary fellowship examination at Colombo in January, 1958. This had been requested by Ceylon University. The council also appointed Sir HARRY PLATT, president of the College, visitor to the first primary fellowship examination of the College of Physicians and Surgeons of South Africa. The College's honorary medal was presented to Lady WEBB-JOHNSON.

COMING EVENTS

Harveian Society.—Sir RUSSELL BRAIN, P.R.C.P., will deliver the Harveian Lecture on March 27 at 8.15 p.m. at 11, Chandos Street, London, W.1. His subject will be "Some Disorders of the Cerebral Circulation." The lecture is open to any member of the medical profession.

Twelfth International Congress on Occupational Health.—Helsinki, July 1–6. Registration before April 1. Details from the organizing committee, Työterveyslaitos, Haartmaninkatu 1, Helsinki-Töölö, Finland.

"Child and Family Psychiatry."—Refresher course for medical practitioners (including postgraduate students), April 8–12, at the Ipswich and East Suffolk Hospital. Details from Dr. H. G. HOWELLS, Department of Child Psychiatry, 11, Fore Street, Ipswich. No fee.

National Association for Mental Health.—Annual conference will be held at Church House, Westminster, London, S.W.1, April 11 and 12. The theme will be "The Maladjusted Child: The Underwood Report and After." Details from the Association, 39, Queen Anne Street, London, W.1.

British Tuberculosis Association.—Provincial meeting in Oxford, April 12 and 13. Details from the hon. secretary, 59, Portland Place, London, W.1.

NEW ISSUES

Abstracts of World Medicine.—Issued in the first week of each month, this journal contains abstracts of important papers selected from the current medical literature of the world. Annual subscription £4 4s., single copy 8s. 6d.; obtainable from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

British Journal of Ophthalmology.—The new issue (Vol. 41, No. 2) is now available. The contents include:

ACTION OF DIAMOX AND AMMONIUM CHLORIDE ON FORMATION OF AQUEOUS HUMOUR. Maurice B. Langham and Patience M. Lee.
DISTENSIBILITY OF THE EYE. E. S. Perkins and J. Gloster.
EXTENSIBILITY OF STRIPS OF SCLERA AND CORNEA. J. Gloster, E. S. Perkins, and Marie-Louise Pommier
SUMMERSKILL'S DACRYOCYSTORHINOSTOMY. R. W. B. Holland.
AIR IN THE EYE. A. Lister.
CONGENITAL IRIS LESION. W. J. Levy.
LEECH-BITE OF THE CORNEA. M. Gilkes.
CORRESPONDENCE.
BOOK REVIEW.
NOTES.
OBITUARY.

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SOCIETIES AND LECTURES

A fee is charged or a ticket is required for attending lectures marked ●. Application should be made first to the institution concerned.

Monday, February 25

POSTGRADUATE MEDICAL SCHOOL OF LONDON.—4 p.m., Professor M. L. Rosenheim: Pyelonephritis.
ROYAL INSTITUTE OF CHEMISTRY: THAMES VALLEY SECTION.—At Physical Chemistry Laboratory, South Parks Road, Oxford, 8.15 p.m., joint meeting with Alembic Club, Oxford. Professor W. C. Fernelius (Pennsylvania): Polonium.
UNIVERSITY COLLEGE LONDON: DEPARTMENT OF PHARMACOLOGY.—At Physiology Theatre, Gower Street, W.C., 5.30 p.m., Dr. T. S. Work: Biochemical Approach to the Problems of Protein Synthesis.

Tuesday, February 26

BRITISH POSTGRADUATE MEDICAL FEDERATION.—At London School of Hygiene and Tropical Medicine, 5.30 p.m., Professor J. B. Duguid: Arterial Occlusion.
INSTITUTE OF DERMATOLOGY.—5.30 p.m., Mr. B. E. D. Cooke: Disorders of Buccal Mucosa.
ROYAL ARMY MEDICAL COLLEGE.—5 p.m., Professor W. Melville Arnott: Physiological Features of Emphysema.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 p.m., Hunterian Lecture by Professor D. F. E. Nash: Congenital Spinal Palsy—The Management of Incontinence.
ROYAL STATISTICAL SOCIETY: MEDICAL SECTION.—At Keene Lecture Theatre, Westminster Medical School, S.W., 5.30 p.m., Mr. D. J. Newell and Dr. A. T. Elder: Provision of Hospital Beds.
ST. MARY'S HOSPITAL MEDICAL SCHOOL.—At Wright-Fleming Institute Theatre, 5 p.m., Dr. P. M. F. Bishop: Problems of Intersex.
WEST END HOSPITAL FOR NEUROLOGY AND NEUROSURGERY.—5.30 p.m., Dr. J. N. Milnes: neurological demonstration.

Wednesday, February 27

BIRMINGHAM MEDICAL INSTITUTE: SECTION OF PSYCHIATRY.—8 p.m., Dr. Stephen J. L. Taylor: Psychiatry and Politics.
COUNCIL OF SCIENTIFIC MANAGEMENT IN THE HOME: WOMEN'S GROUP ON PUBLIC WELFARE.—At British Institute of Management, 8, Hill Street, W., 3.30 p.m., public lecture by Dr. C. A. Boucher: Planning for Safety in the Home.
HARVEIAN SOCIETY OF LONDON.—At 11, Chandos Street, W., 8.15 p.m., clinico-pathological meeting.
INSTITUTE OF DERMATOLOGY.—5.30 p.m., Miss Phyllis Wade: Radiation Treatment of Skin Cancer (Part II).
INSTITUTE OF DISEASES OF THE CHEST.—5 p.m., Mr. Vernon C. Thompson: Surgery of Mitral Stenosis.
INSTITUTE OF UROLOGY.—4.30 for 5 p.m., Mr. A. R. C. Higham: Neoplasms of the Kidney.
POSTGRADUATE MEDICAL SCHOOL OF LONDON.—2 p.m., Dr. J. H. Humphrey: Biochemical Mechanisms Underlying Hypersensitivity Reactions (2).
ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE: EDINBURGH BRANCH.—At West Medical Theatre, Edinburgh Royal Infirmary, 5 p.m., Lieutenant-Colonel John Morison, I.M.S. (ret.): How the Problem of Plague Was Solved.

Thursday, February 28

BRITISH POSTGRADUATE MEDICAL FEDERATION.—At London School of Hygiene and Tropical Medicine, 5.30 p.m., Professor H. Grüneberg, F.R.S.: Localization of Inherited Diseases in the Body.
GLASGOW UNIVERSITY MEDICO-CHIRURGICAL SOCIETY.—7.30 p.m., joint meeting with Dialectic and Law Societies. "Royal Commission" on Homosexuality.
INSTITUTE OF DERMATOLOGY.—5.30 p.m., Dr. H. Haber: Cutaneous Manifestations of Syphilis.
LIVERPOOL MEDICAL INSTITUTION.—8 p.m., symposium: Poliomyelitis. Speakers, Dr. A. B. Christie: Professor A. W. Downie, Mr. G. E. Thomas, and Dr. J. R. Esplen.
NUFFIELD ORTHOPAEDIC CENTRE.—At Wingfield-Morris Orthopaedic Hospital, 8.30 p.m., Mr. O. J. Vaughan-Jackson: Some Surgical Aspects of the Rheumatoid Hand.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5.30 p.m., Otolaryngology Lecture by Dr. D. B. Fry: Speech and Language.
ROYAL NORTHERN HOSPITAL.—2.45 p.m., Mr. R. S. Murley: Carcinoma of the Breast and its Treatment.
ROYAL SOCIETY OF HEALTH.—At the Town Hall, West Bromwich, 10 a.m., Dr. J. F. Skone: The Coloured Worker.

Friday, March 1

BRITISH TUBERCULOSIS ASSOCIATION.—At 26, Portland Place, W., 4.30 p.m., subject: Acute Emergencies in Chest Medicine. Speakers, Dr. Thomas Simpson, Mr. N. R. Barrett, and Mr. T. Holmes Sellors.
●INSTITUTE OF DERMATOLOGY.—5.30 p.m., Dr. E. J. Moynahan: clinical demonstration.
INSTITUTE OF DISEASES OF THE CHEST.—5 p.m., Dr. R. W. Riddell: clinical demonstration.
POSTGRADUATE MEDICAL SCHOOL OF LONDON.—10 a.m., Mr. A. Dickson Wright: Intestinal Obstruction. 4 p.m., Dr. J. N. Morris: Epidemiology of Coronary Heart Disease.
ROYAL MEDICAL SOCIETY, EDINBURGH.—8 p.m., dissertation by Mr. D. Flenley: Bronchitis
ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—At Royal Faculty of Physicians and Surgeons of Glasgow, 8.30 p.m., Dr. A. T. Doig: Prevention of Industrial Diseases.
ST. MARY ABBOTS HOSPITAL.—At Lecture Room, School of Nursing, 6 p.m., Third Annual James Yearsley Memorial Lecture by Mr. I. Simson Hall: Mobilization Operation in the Treatment of Otosclerosis.
WHIPPS CROSS HOSPITAL MEDICAL SOCIETY.—At Occupational Therapy Department, 8.30 p.m., lecture and demonstration by Dr. B. E. Brocks: Occupational Therapy as a Factor in Treatment.

Sunday, March 3

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—10.15 a.m., clinical demonstration for general practitioners. Dr. G. I. M. Swyer: Use of Hormones in General Practice.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Bush.—On February 13, 1957, at Edgware General Hospital, Middlesex, to Lois and Dr. Richard Bush, of New Zealand, a sister for Tony.
Woods.—On February 9, 1957, at the Jessop Hospital for Women, Sheffield, to Gilbert and Sheila Woods (formerly Costello), a daughter.

DEATHS

Giuseppi.—On January 19, 1957, in a hospital, London, Paul Eugène Hedwige Giuseppi, M.B., C.M., aged 88.
May.—On January 26, 1957, at Woodleigh, Ware, Herts, George Ernest May, M.R.C.S., L.R.C.P., aged 89.
Robinson.—On January 26, 1957, at 36, Mayfield Avenue, Orpington, Kent, Harold Joseph Robinson, M.B., B.Ch., formerly of Kirkoswald, Cumberland.
Sinnette.—On January 22, 1957, Margaret Mitchell Sinnette, M.B., Ch.B., of "Wayside," Barkerend Road, Bradford, Yorks.

Any Questions ?

We publish below a selection of those questions and answers which seem of general interest. It is regretted that it is not possible to supply answers to all questions submitted.

Weight Gain in Pregnancy

Q.—*(1) What are the principal factors contributing to the gain in weight during pregnancy? (2) What is the normal range of the gain, and does the mother's starting weight, age, or parity affect this? (3) How should an excessive weight gain be managed?*

A.—Gain in weight during pregnancy is determined by : an increase in the volume of the blood ; an increase in tissue fluids ; the foetus ; the liquor amnii ; the placenta ; the increase in size of the breasts ; the growth of the uterus ; and a deposition of fat in subcutaneous and other tissues. An excessive overall gain in weight during pregnancy may be determined by any of these factors, but the ones which matter most are the foetus (multiple pregnancy, for example), the liquor amnii (hydramnios), tissue fluids (oedema), and deposition of fat. The last is usually the most common. An excessive gain occurring suddenly or during a short period generally denotes abnormal fluid retention, but can also be accounted for by acute hydramnios.

The average weight gain during the whole of normal pregnancy, in which no attempt has been made by dieting to increase or decrease the rate of gain, is of the order of 28 lb. (12.7 kg.). Of this only about 2 or 3 lb. (0.90 or 1.36 kg.) are usually gained during the first trimester. When the nausea and vomiting of early pregnancy has ceased it is probably normal for patients to have a hearty appetite and to gain weight at the rate of about 1½ lb. (0.68 kg.) weekly until about the end of the fifth month. During the second half of pregnancy an average weekly gain of about 1 lb. (0.45 kg.)—within limits of ½ to 1½ lb. (0.34 to 0.57 kg.)—appears to be consistent with the greatest chances of a satisfactory outcome. The rate of gain usually decreases during the last few weeks, and a slight loss of weight may occur after term. Total weight gains ranging from over 50 lb. (22.7 kg.) to practically nothing may be associated with a satisfactory outcome, but towards both extremes the chances of abnormality are relatively high. Starting weight, age, and parity seem to exert relatively little influence upon the rate at which weight is gained, but many obese women gain less than the average during pregnancy.

A high but steady rate of weight gain seems in most cases to be due to deposition of fat and other tissues, and does not affect adversely the outcome of pregnancy. But a high rate of gain, and particularly a sudden increase in the rate, may foreshadow the onset of pre-eclampsia ; careful examination for rising blood pressure, albuminuria, and oedema is therefore indicated. Before oedema appears clinically the patient may report that her ankles swell at night or that her rings have become tight. It must be remembered that high rates of weight gain may also be associated with recovery from vomiting or an infection, or, as stated above, with hydramnios or twin pregnancy. There is strong evidence that control of weight gain by dietary restriction does help to reduce the incidence of eclampsia and severe pre-eclampsia, at least in primigravidae.

While the dangers associated with excessive gains of weight are well known, it is less commonly appreciated that unduly low gains, especially in undersized women, are often associated with premature labour or the birth of an underweight baby at term ; there is, however, little evidence so far that the incidence of prematurity can be reduced by encouraging such patients to eat more and so to put on more weight. Loss of weight may be useful in assessing the severity of vomiting or infection during pregnancy, and in late pregnancy or after term may precede intrauterine death.

Allergy to Mascara

Q.—*A patient is allergic to all the varieties of mascara she has tried. What is the responsible ingredient, and are any makes of mascara suitable for allergic subjects?*

A.—Mascara is a generic term applied to all forms of colouring material applied to the eyelids. A very large number of bases and tinting materials are used commercially. Universal allergy is most unlikely. Carbon black, for example, is quite inert. Possibly the patient is upset by the vehicle—e.g., soap. A number of quite inactive and non-sensitizing formulae can be found in *Modern Cosmeticology*.[1]

REFERENCE

1 Harry, R. G., *Modern Cosmeticology*, 4th ed., 1955, p. 228. Leonard Hill Ltd., London.

Luminous Dials

Q.—*In the light of recent knowledge about the hazards of ionizing radiations, what advice should be given to patients who inquire about the safety of objects such as clocks, watches, etc., where luminous paint is used for the numerals?*

A.—This point is covered in the Medical Research Council's recent report, *The Hazards to Man of Nuclear and Allied Radiations* (Cmd. 9780, H.M.S.O., 1956). The contribution of radiation from the estimated four million watches and ten million clocks with luminous dials in Britain is small but real (equivalent to about 1% of natural background). The main hazard is to workers in the luminizing industry, but the risk from the widespread use of such instruments is not entirely negligible. While there are circumstances which require and justify the use of instruments with self-luminous dials, for most people there is no such necessity and their wider use constitutes an avoidable, if small, genetical risk as regards *the population as a whole*, which could be minimized for all concerned if the amount of radioactive material in these instruments were reduced to the lowest possible level.

To this may be added the comment that, as regards *the individual*, possessors of luminous wrist-watches, and especially children, should be discouraged from taking these articles into bed with them. If at any time the watch-glass is broken, the timepiece should not be used at all until adequate repairs have been effected.

Treatment of Otosclerosis

Q.—*Are hearing-aids of value in otosclerosis? If so, what kind of aid is required, and how much benefit may be expected? What are the indications for operative treatment in this condition?*

A.—Deafness in otosclerosis is typically of the conductive type and results from fixation of the stapes in the oval window by the disease process, thus impeding the passage of sound waves to the cochlea. In this type of deafness practically all of the hearing loss is regained by hearing-aids of the valve amplifier type.[1] The Medresco hearing-aid, which is obtained and serviced without cost to the patient under the National Health Service, may be used with great benefit. If commercial hearing-aids are preferred, information about reliable firms who supply these may be obtained through the National Institute for the Deaf, 105, Gower Street, London, W.C.1.

Operative treatment in otosclerosis is directed towards breaking through the bony barrier that prevents sounds from reaching the cochlea. Various methods of achieving this have been described.[2] The most successful has been the so-called fenestration operation in which a window is drilled above the oval window opening into the vestibule and adja cent ampulla of the lateral semicircular canal. A second method which has lately given promising results is that of mobilization of the stapes.[3] Such operations are unlikely to be successful unless undertaken by a surgeon with special

experience of the technique, and are usually performed in a magnified field using a binocular dissecting microscope.

If the nerve of hearing is affected to any great extent, surgical treatment will not help. Indications of such nervous involvement include voice changes, intolerance of amplification, disappearance of paracusis, and, very often, loss of acuity for bone-conducted sounds. On an average there will be an improvement of 25 decibels for the critical speech frequencies (512, 1024, 2048 c.p.s.). For patients with a much greater initial hearing loss than 50 decibels, the benefit they are likely to experience from operation will be limited.

REFERENCES

[1] Dix, M. R., Hallpike, C. S., and Hood, J. D., *Proc. roy. Soc. Med.*, 1949, **42**, 527
[2] Cawthorne T., *Brit. med. Bull.*, 1956, **12**, 143.
[3] Rosen, S., *J. Mt Sinai Hosp.*, 1956, **23**, 200.

Transmission of Toxoplasmosis

Q.—*Can you give me some information on the mode of transmission of toxoplasmosis? I have come across a case in which a mother transmitted it to her child in utero. Is there a likelihood of its being transmitted to another baby if she should conceive again?*

A.—Toxoplasmosis can be congenital or acquired. It is thought that congenital infection arises when the mother undergoes her initial infection with toxoplasms during pregnancy, the accompanying parasitaemia promoting transplacental spread of the infection. It is most unlikely, therefore, that more than one infant of the same mother could suffer from congenital toxoplasmosis. Clinical congenital toxoplasmosis must be distinguished from positive serological tests in the infant due to antibodies passively transferred from the maternal circulation.

In acquired toxoplasmosis, where our knowledge is incomplete, the reservoir of infection appears to be domestic animals and food products from them, such as meat, which have been insufficiently cooked to kill the contained toxoplasms. Further details about the animal reservoirs will be found in a report of a recent meeting of the Royal Society of Tropical Medicine and Hygiene.[1] There is also some evidence to suggest a direct spread from human to human by contact or droplet infection.

REFERENCE

[1] *British Medical Journal*, 1957, **1**, 280.

Chinese Liver Fluke

Q.—*What treatment is advised for infection with the Chinese liver fluke (Clonorchis sinensis)? Here in south-west Korea chloroquine is popular but successful in only about half the patients treated. What is known of the pathology of the condition?*

A.—The treatment of *Clonorchis sinensis* infection is unfortunately unsatisfactory. In addition to the use of chloroquine, which is generally regarded as being of very limited if any value, sodium antimony tartrate and gentian violet are commonly used. Sodium antimony tartrate is given in a 0.5% solution in sterile isotonic glucose or sodium chloride solution. The solution may be boiled for five minutes in order to sterilize it, but it should not be autoclaved. The first dose consists of 0.5 gr. (32 mg.), and this may be increased by amounts of 0.5 gr. (32 mg.) until doses of 2–2.5 gr. (130–160 mg.) are being given. These should be administered intravenously at 24- or 48-hour intervals, the solution being injected slowly over a period of 15 minutes. The total course consists of 25–35 gr. (1.65–2.3 g.). Patients usually complain of nausea while having the larger doses in this treatment. Gentian violet is administered in enteric-coated capsules containing 1–2.5 gr. (65–160 mg.) thrice daily; the course of treatment should be continued for two to four weeks.

A recent comprehensive study of the pathology of the condition has been made by P. C. Hou.[1]

REFERENCE

[1] Hou, P. C., *J. Path. Bact.*, 1955, **70**, 53.

Management after Intra-articular Hydrocortisone

Q.—*What is the best treatment after an injection of hydrocortisone into (a) a joint, and (b) a tendon sheath, e.g., in tennis elbow? Should the joint be moved or rested, and what form of physiotherapy is recommended?*

A.—Injection of hydrocortisone into a joint after aspiration of excess synovial fluid is performed with the object of exerting an anti-inflammatory effect. Therefore it is wise to rest the joint for a period afterwards—usually about 48 hours. Following this the muscles around the joint should be built up to provide as strong a support as possible. This can best be done by means of exercises. Preliminary faradism may be used to show the patient how the muscles can be contracted if they are weak.

On the other hand, when hydrocortisone is given into the soft tissues for lesions such as tennis elbow, the object of treatment is to free any adhesions between the muscles. Therefore the structures should be moved actively after a short time.

Threadworms

Q.—*What order of number of threadworms may be present in the intestine of a heavily infected child? Where do they principally congregate, and can they interfere with the child's nutrition by reason either of their bulk alone or of their own metabolic demands?*

A.—There may be hundreds or only a few. No one has taken the trouble to count the number in one individual, although over 40% of the children in this country are infected with threadworms.

The worms normally inhabit the caecum, but may occasionally be found in the ileum or appendix, and rarely in the stomach, oesophagus, or nose. In a few instances they have migrated into the peritoneum and Fallopian tubes. Unlike the males, which remain in the caecum, the gravid females migrate via the rectum to the perianal region where they normally lay their eggs. Sometimes they also enter the vagina. The movements of the worms on the anal folds cause intense itching.

Heavily infected children may show some anaemia with loss of appetite and malnutrition. This cannot be due to the "bulk" of the worms, as the latter are very small. More probably it is attributable to catarrhal inflammation resulting from mechanical irritation of the intestinal mucosa. The possibly toxic effects, if any, of the worms' metabolic products have not been investigated. But the nervous symptoms shown by heavily infected children and occasionally by adults are due, partly, to the psychological effects of the movements of the gravid worms on the perineal surface. The "metabolic demand" of the worms is, of itself, unlikely to interfere with the patient's nutrition.

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British Medical Association

REPORT OF THE COMMITTEE ON THE CONSTITUTION OF THE ASSOCIATION

ANNUAL REPORT OF COUNCIL: APPENDIX I*

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PRELIMINARY

1. The Constitution Committee was established, on the instructions of the Representative Body, in 1953, with the following terms of reference:

> To examine and report on the present structure of the Association, with special reference to the reorganization of the Representative Body.

2. The demand for a review of the Association's constitution arose originally from widespread doubt about the ability of the Representative Body to discharge its functions efficiently. The Representative Body is the Parliament of the Association, and on the efficient conduct of its business the welfare of the Association depends. Misgivings, which were widespread, were summarized and circulated to Divisions by the Winchester Division in 1953 together with constructive, if somewhat drastic, suggestions for reform.

3. In an earlier memorandum, the Winchester Division had referred to Representative Meetings "as a shambles—too many members discussing too many resolutions." The last phrase sums up the factors which have contributed to the present situation. Firstly, the increase in membership, which has almost doubled since before the war, has caused a proportionate increase in the size of the Representative Body. The question of accommodation has in itself become a major problem, apart from the comfort and convenience of Representatives attending the Meetings. Secondly, the political events of the post-war era were of such vital concern to the profession that the business facing Representative Meetings, both annual and special, grew so great that severe strain was apparent.

4. Although the over-long agendas which accompanied the discussions on the National Health Service Bill and resulted in many important matters being referred to Council with little or no debate are now matters of past history, and although steps have been taken to streamline the agenda to some extent, many members have felt that the Representative Body still has too much to do and is too large in size to conduct its business with despatch and efficiency. It was these factors that caused the Representative Body in 1953 to instruct the Council to form an *ad hoc* Constitution Committee "to take evidence, consider, and report on a reorganization of the Representative Body and such other constitutional matters as Council may decide" (Minute 249). In appointing the Committee the Council had regard to the decision of the Representative Body that not more than 50% of the members should be members of the Council and also to the need to include representatives of all the main fields of practice and of differing types of area with a balanced geographical distribution. This aim has been achieved, but it has necessitated a large committee of some 33 members (see Appendix A).

*Although this is the report of a Special Committee, it will be discussed on the first day of the Representative Meeting as an appendix to the Annual Report of Council, which will be published shortly. Every member is asked to keep this *Supplement*, which contains matters referred to Divisions, until the subjects have been discussed by his Division.

5. The main objects of the Association, as stated in its Memorandum, are "to promote the medical and allied sciences, and to maintain the honour and interests of the medical profession." Its history has proved that the only certain way of achieving these objects is through a constitution based on sound democratic principles, under which the individual member can (*a*) freely voice his views and make these views felt in the policy of the Association and (*b*) satisfy his needs—scientific, social, and material. On this foundation the existing Association structure has evolved. Under this structure the Representative Body (representative, as the name implies, of members throughout the Association) is the Parliament of the Association, formulating policy. The Council has the duty of directing the business of the Association under the control of the Representative Body, and in the discharge of that duty is responsible not only for implementing decisions of the Representative Body but for formulating policy for its consideration. It carries out these duties through the medium of Committees, elected as to part by the Representative Body and as to part by the Council itself. The Branches are territorial units with defined duties, which include the election of the majority of members of the Council. Lastly, the Branches are divided into Divisions, each with autonomous powers in regard to its management, subject always to the provisions of the Articles and By-laws. The Divisions are the basic units of the Association and complete the circle by appointing, in accordance with their numerical strength, the members of the Representative Body. In this way individual members can make their influence felt, through their Representatives, in determining Association policy.

6. With this constitution and with a membership comprising the great majority of the working profession at home and abroad, the Association has been in a powerful position to carry out its objects. It promotes the medical and allied sciences in various ways—through a Standing Science Committee, the *British Medical Journal*, the Library, the scientific activities of the Annual Meetings, which have increased in scope in recent years, and through functions of scientific interest arranged by the Branches and Divisions. Its medico-political activities and its influence in health legislation since the turn of the century have grown with the strength of its membership. The developments affecting medical practice which are referred to in later paragraphs of this Report and in particular the ramifications of the National Health Service have, however, raised the question of whether the constitution in its existing form is such as to enable the Association to continue to function efficiently in the new conditions. The Council has therefore liberally interpreted the instruction of the Representative Body and has so framed the reference to the Committee as to cover an examination of the constitution from the ground up, and, if necessary, to restore the balance between the medico-political and the other manifold activities of the Association summed up in the phrase "to promote the medical and allied sciences." It is from these aspects that the Committee has drafted its Report.

7. Mr. H. H. Langston, of Winchester, has been Chairman of the Committee. At an early stage in its deliberations the Committee delegated a great deal of detailed work to a Chairman's Subcommittee, which has met frequently to examine statistics and other evidence, to collect information, and to correlate the data on which the main conclusions and recommendations of the Committee are based.

General Considerations

8. As a prerequisite to the examination of the several parts of the Association's constitution, the Committee has reviewed the developments affecting medical practice during the past 50 years. In trying to assess the extent to which the constitution may have succeeded or failed as an instrument in furthering the objects of the Association, the Committee has been impressed by the essential soundness of a structure which, designed half a century ago, has served its purpose well and has withstood two major political crises affecting the basic principles of medical practice; the disruptive effect of two world wars; and the less dramatic but equally important gradual extension of the State's responsibility for health and welfare. In spite of strain and stress and in spite of the increase of specialism which has tended to create gaps between and, indeed, within the main fields of practice, the claim of the Association to speak for the whole profession is stronger now than at any time previously, and is generally recognized. This cannot be attributed to the increase in membership alone, but is in large measure due to the fact that the Association's constitution (as set out in para. 5) is based on a federation of geographical units rather than an alliance of craft groups. In spite of immense differences between these units, both at home and overseas, in size, geographical area, and the nature of the predominant type of practice, it has been possible during the past 50 years to preserve unity of aim and purpose.

9. Though in essentials the constitution has not changed since 1902, there have been many adaptations to changes in the political environment and to changes within the profession itself. Two of these adaptations are important as forming precedents, the implications of which were not foreseen at the time. These were the establishment in 1913 of the Conference of Local Medical and Panel Committees and its executive the Insurance Acts Committee, and the formation in 1927 of the first Special Groups. The reason in both cases was to prevent the formation of separate organizations with the conflicting loyalties arising therefrom.

10. The changes following on the introduction of National Health Insurance and the evolution of machinery for dealing with special groups has resulted in both cases in compromises. In each it is possible in theory for non-members of the Association to influence, if not to direct, Association policy. The stresses and strains inherent in these constitutional compromises have become much more apparent and potentially dangerous now that virtually the whole profession is subject to terms and conditions of service under some form of contract. The division of the administrative structure of the National Health Service into separate compartments and the extension of medical practice under contract to cover the whole community has exaggerated, though it did not cause, the divergence of interests within the profession which had been gradually increasing throughout the whole period. This is reflected in the Association's Committee and Group structure, which, though adapted to meet these problems, cannot be absolved from contributing to some of the difficulties it was designed to cure.

11. In 1938 the Medico-Political Committee was replaced by two standing committees, the Special Practice Committee and the General Practice Committee (now the Private Practice Committee). Each represented a defined field of practice. This emphasized the differing interests between the two groups and also gave undue prominence to the fact that both in the Divisions and in the Representative Body general practitioners were in a majority. This fact above others has created the desire for independence and the defining of spheres of interest. The distinction between sectional interests is largely artificial and its effect on the Representative Body has been exaggerated, but it is nevertheless a factor of importance. The formation of each new special group also fosters the feeling of "being in a minority" among the members of the Group, together with the tendency to seek the right of independent action. Nor is the problem of minorities confined to the Representative Body. It occurs in the Central Consultants and Specialists Committee, where each new group, as well as such categories as whole-time specialists, medical administrators, etc., is in a minority. It occurs, though to a lesser extent, in the Committees dealing with general practice problems. The practitioner in wholly private practice, the unestablished or small-list practitioner, and the rural practitioner may at times feel at a disadvantage in the Private Practice and General Medical Services Committees. The fact that the Council has overriding control over these Committees does not entirely relieve the misgivings felt by members of minority groups; direct access

may be difficult, and they are conscious that their point of view can be expressed only through the major Committee concerned.

12. In the sphere of general practice, the extension of contract practice to the whole community has increased the field of work and consequently the relative importance of the General Medical Services Committee and the Conference of Local Medical Committees. This has caused serious misgivings in some quarters. At the Representative Meeting in 1953 there were 44 resolutions under the heading "General Medical Services," in contrast to 6 in 1927 and 5 in 1935 under the heading "National Health Insurance." The effect of this change is not, however, very important in the Representative Body, because general practitioners are in a majority and because the representatives in the Representative Body and in the Conference of Local Medical Committees are, in the main, the same practitioners. It is in the Consultant and Specialist field that major constitutional problems arise, and these are due mainly to four factors:

(1) The area and structure of Regional Consultants Committees bears no relation to that of the Association's Divisions and Branches, and there is no provision for formal representation of Association units on the Regional Committees.

(2) Consultants and specialists form a minority in the Representative Body.

(3) The need for joint negotiating machinery to maintain a united front in the hospital service field.

(4) The multiplication of Special Groups.

13. Nevertheless, a special committee which was established in 1949 to consider the situation created by the formation of autonomous bodies within the Association and their relationship to the Representative Body found that the difficulties and dangers were more apparent than real and recommended that the existing arrangement should continue.

14. With due regard to past history and appreciating that the newly qualified and as yet unestablished member is in a very different environment and facing entirely new problems, the Committee has examined in great detail each part of the constitutional structure of the Association. It is recommending few radical changes, but these are important and controversial. Briefly they may be summarized as follows:

(1) A new conception of the Branch. (2) A substantial reduction in the size of the R.B. (3) Extension of representation of special interests in the R.B. (4) Revision of the programme of Scientific Meetings. (5) A new approach to the problem of Special Groups.

15. In addition, the Committee is recommending many changes of lesser magnitude, which it is hoped will increase the value of membership to the individual doctor and improve the conduct of business at Representative Meetings. Some of these changes will appear as recommendations, some have already been effected, including the proposal to establish an Annual Conference of Regional Consultants Committees (para. 133); the use of Association funds for social purposes (para. 32); liaison between Divisions and other local bodies (paras. 29 and 31).

16. The proposals made in the Report do not in every instance express the unanimous view of members of the Committee. Membership of the Committee will, however, in no way preclude members from expressing in the Council, in the Divisions, and in the debate in the Representative Body their personal views where these differ from those of the majority of the Committee. In this way it has been possible to avoid minority reports.

I. PERIPHERAL ORGANIZATION

17. The Committee has considered the peripheral organization of the Association under the following headings:

(*a*) the place of the Branch and Division in the framework of the Association;

(*b*) the effect on the Branch and Divisions of developments in recent years resulting from health legislation and reorganization of Branch and Division machinery to ensure that local units will be able to reconcile fully within their framework the interests of all members of the Association and to establish effective liaison with other local administrative bodies—statutory and non-statutory;

(*c*) the geographical distribution of the units.

It has confined its attention to the Home Branches and Divisions, and has not attempted to discuss the organization overseas. The latter is largely dependent on local law and custom, and the constitution of the overseas units of the Association, as set out in the Articles and By-laws, appears to be satisfactory.

1. THE BASIC UNIT—THE DIVISION

(A) The Function of the Division, its Numerical Strength and Area

18. In a democratic institution of the nature of the Association the member as an individual is primarily a member of the Division in the area of which he resides and with which his main contact must be. *Ipso facto*, he is a member of the whole Association. *It follows that the Division must be the basic unit of the Association, so constituted as to serve the essential needs of its constituents.* Its area should be such as to provide every one of its members with a reasonable opportunity of attending every important meeting, and its numerical strength such as will allow of efficient organization and reasonable contact between members. The duty of election to membership of candidates within its area should, as advocated in para. 23, rest with the Division and not with the Branch as at present. These basic principles having been accepted, the Committee makes the following observations:

(i) *Function of the Division*

19. The function of the Division should be to foster and maintain personal contact between its members; to provide these members with opportunity for scientific discussion; and to provide a forum for discussion of their problems.

Personal Contact: The importance of social occasions—formal and, more particularly, informal—as a factor in promoting the success of a Division is emphasized. The provision of opportunities for personal contact must depend largely on local circumstances.

The Young Practitioner: The introduction of the young practitioner to B.M.A. work should be regarded as an integral part of this function.

Scientific Activities: The type of Scientific Meeting will depend to a large extent on local circumstances.

Medico-Political Field: The function of the Division in this field should be:

(*a*) to implement central and local policy;

(*b*) to take action on behalf of its members individually or collectively and to co-ordinate the views of those engaged in the different branches of the profession. This aim cannot be achieved by merely duplicating the function of, or attempting to compete with, the various statutory or functional bodies which have specific duties within defined fields. The main object should be to co-ordinate local professional opinion and to pool knowledge and ideas for the common good.

20. The success of a Division must ultimately depend upon the loyal co-operation and support of all its members, no matter in what branch of the profession they may be engaged. Participation in the activities of the Division by its consultant and specialist members is equally as important as that of the general practitioner, and this is true also of the young and unestablished practitioner, whether in the hospital service or in general practice. The public health medical officer, whose work cannot satisfactorily be divorced from that of his colleagues in the other services, has his place in the Division organization. It is the duty of the

Executive Committee to impress upon all members of the Division the importance of regarding themselves as members of *one* body, with closely interrelated interests.

21. In discussing how this integration of the profession could most effectively be achieved the Committee has considered a suggestion that the Division should invariably be conterminous in area with the Executive Council and that it should, through its Executive Committee, operate as the Local Medical Committee. The Committee does not favour this proposal. While there are advantages in a close alignment between the Division on the one hand and the Local Medical Committee and Local Government area on the other, the Division should not necessarily be conterminous with any one statutory or functional body, whether Regional Consultants Committee, Local Health Authority, or Local Executive Council. The function of the B.M.A. Division is by no means confined to the interests of those in contract with the Executive Council. If the area of the basic unit is to be such that every member thereof shall have a reasonable opportunity of attending every important meeting, whether scientific, social, or medico-political, the Division must have considerable autonomy in determining its own area. Within this principle the aim should be to include all the interests represented by the local statutory and functional bodies.

22. So far as the relationship of the Division to the Local Medical Committee is concerned, there is at the present time a considerable overlap in membership, and this overlap should make it possible to ensure that the Division is kept fully informed at its meetings of Local Medical Committee activities.

23. There is a further function—the election of candidates for membership of the Association—which the Committee believes should in future be transferred to the Division. At the present time this duty rests with the Branch Council, and this procedure has given rise to criticism on the ground that it may lead to considerable delay. It has also been suggested that the Division Executive is in a better position to judge the candidates' suitability for membership of the Association. The Committee is recommending the transfer of this function to Divisions subject to certain reservations which are set out in para. 48 of this Report. Its recommendation is contained in Recommendation 6 on page 79.

(ii) *Size of the Division*

24. In order to carry out its proper functions, the Division should be large enough to include in its membership all the main fields of medical practice. It follows that there is a point below which a Division may be too small numerically or geographically to achieve this, since it is essential that the Executive Committee should, where possible, include representatives of statutory local committees, the Public Health Service, hospital staffs, and other groups within the profession. On the other hand, the Division should not be so large that it is virtually impossible for Honorary Secretaries and Chairmen, together with the members of their Executives, to maintain personal contact with the members of their Divisions.

25. The Committee has found it impossible to arrive at any definite conclusion regarding the optimum size of a Division. 150–200 has been suggested as a possible standard, but it is realized that there must be considerable flexibility to allow for geographical differences, association with hospitals, universities, etc. The very large Division, though compact geographically, presents special difficulties of organization and administration which may sometimes prove a handicap to efficiency. These difficulties have in some instances been overcome by the establishment within the Division of a "ward" system, each with its own organization and officers, but subject to the overriding control of the Executive of the Division.

(iii) *Area of the Division*

26. As stated in para. 21 the Committee holds strongly to the view that there should be no arbitrary determination of boundaries, but that within the limits of a generally defined policy the unit should have the right to determine its own area, having regard to the convenience of its constituents. The area of the Division should be such that every member has a reasonable opportunity to attend meetings, bearing in mind the revolutionary change in methods of transport since the present Division structure was originally established.

27. To summarize: (*a*) The autonomy of the Division in determining its boundaries should be preserved. (*b*) In this determination the importance of a close relationship between the Division and other local bodies—e.g., medical societies, hospital groups, etc.—should not be overlooked. (*c*) Large units covering, in the main, County areas might well operate more efficiently if divided into smaller areas covering parts of the County. In large Divisions covering urban areas, the "ward" system might be preferable.

(B) Activities of Divisions

28. The answers to a questionary, issued to Divisions and Branches as part of the Committee's procedure, suggested a number of ways in which Divisions might improve their efficiency and their service to their members. The Committee considers that it should be for the Divisions themselves to implement the suggestions made in the following brief summary:

(i) *Liaison with Local Medical Societies*

29. Where active local medical or clinical societies coexist with B.M.A. Divisions there is adequate liaison or some working arrangement in only about half the cases. The difficulties are appreciated, but much could be done by concerted action to improve the amenities offered to members. Among methods suggested are:

> Representation of the Division on Local Medical Societies; joint meeting or meetings called alternately by the Division and Medical Society; invitation to members of the Division to meetings of the Society and *vice versa*; advertisement of meetings of medical societies through routine notices of Division meetings; the use of the B.M.A. Lecture for bringing local Medical Societies within the sphere of the Division's scientific activities.

(ii) *Representation on Executive Committee of Divisions*

30. The Committee stresses the importance of representation on Division Executives of *all* the sectional interests for which provision is made in the Model Rules of Organization framed by the Council of the Association. For instance, even if one or more members of hospital staffs are elected members of the Executive, there should be, in addition, formal representation of the Hospital Advisory Committee or Committees.

(iii) *Local Liaison Committees*

31. The Committee regards it as the function of every Division to see that effective liaison is maintained with recognized statutory and functional bodies in its area. In certain areas this may be achieved only by forming special liaison committees; in others the existence of such committees may well be unnecessary and the Division Executive Committee, suitably constituted, will be adequate for the purpose. The method of establishing liaison should be left to the discretion of the individual unit in the light of local conditions and circumstances.

(iv) *The Use of Association Funds for Social Purposes*

32. Many Divisions are handicapped and even embarrassed by the limitations imposed on them in the use of Association funds. The difficulty of collecting and maintaining voluntary funds for the provision of social amenities and hospitality is appreciated, and these funds have no permanent basis. It has become increasingly evident that the local units must be given more latitude in the expenditure of Association funds, particularly in respect of hospitality to guests and the provision of light refreshments at ordinary meetings of the Association. Action has accordingly been taken to provide Divisions with the necessary means for this purpose.

33. The Committee recommends:

Recommendation 1: That the Divisions as at present constituted should form the basic unit of the Association's constitution and that no change of area should be effected except on the initiative or with the consent of the Divisions themselves.

Recommendation 2: That while ease of access for members is of paramount importance in determining Division areas, the importance of maintaining a close relationship with local statutory or functional bodies and other local professional groups should not be overlooked.

2. THE BRANCH

34. Having confirmed the position of the Division as the basic unit of the Association's organization, the Committee turned its attention to the existing Branch structure. Its conclusion is that the present method of peripheral organization—namely, the Branch with its component Divisions—is that most suited to the needs of the Association and should be retained. This conclusion is supported by the replies received from Branches and Divisions to the Committee's questionary. The Committee feels, however, that the Branch structure requires to be varied so as to adapt it to the changes in medical practice which have occurred.

35. In 1901, when the present constitution, consisting of a two-tier structure composed of autonomous Divisions grouped to form Branches, was established, the division of medicine into separate branches—general practice, public health, and hospital service—had scarcely begun. Nowadays, the existence of separate fields of practice—accentuated by the National Health Service—has formed one of the main problems facing the Constitution Committee.

36. The Division caters for the individual member and his particular needs and provides a place for the discussion of his problems, whatever his form of practice. *In the Committee's view, however, a further unit of sufficiently large functional area is needed, capable of co-ordinating the opinions of all sections of the profession within that area and of mobilizing its forces behind any section needing support.*

37. The present Branch structure does not meet this need. The policy of grouping Divisions into Branches based on Local Government areas is unrealistic now that the functions of Local Authorities have changed considerably. In particular, it is doubtful whether many of the small Branches are capable of coping adequately with present-day problems, and, since the control of hospitals has passed out of the hands of the County and County Borough Councils, the main reason for the organization of the Branches, and particularly Division-Branches, on a County basis no longer exists.

38. Accordingly it is proposed that the Branches shall be so reorganized that they are capable of taking effective action in the new circumstances. As indicated in the "Preliminary" section of this Report, so far as the General Medical Services under the National Health Service and the Public Health Service are concerned, there has been little difficulty, under the existing machinery, in arranging for effective co-ordination of local professional opinion. It is in the field of the Hospital and Specialist Service, with its regional organization on a wide basis, that difficulty has arisen. The Branches, as at present constituted, cover widely differing areas and it is by accident rather than by design if the area bears any practical relationship to the area of the Regional Hospital Board or Regional Consultants Committee. There is at present no means by which the views of members employed in the Hospital Service in the Regions can be co-ordinated with the views of their colleagues in the other two sections of professional work. This weak point in the organization must be overcome if the Association *is in practice* to substantiate its claim to represent the whole profession at local level. With a view to achieving the necessary strength and stability the Committee recommends that the Branches shall be reorganized on a basis corresponding in the main with the areas of the Regional Hospital Boards. It realizes that this will involve major changes in many areas which may conflict with long-established local tradition and loyalties, but it regards this as an inevitable accompaniment of change designed to bring the whole profession together in one B.M.A. unit of sufficient size.

The Aims of Reorganization

39. The main functions of the Branch would be to co-ordinate the activities of its constituent Divisions and to provide mutual support for the views of the various *units and sections* of the profession within its area—Divisions, Regional Consultants Committees, Local Medical Committees, etc. In effect, in its new form the Branch would operate as a Branch Council, representative of its constituent units, with functions similar to those of the present Branch Council, modified and extended to meet present-day needs. It would hold regular meetings, though these would not be numerous, and, having important duties to perform, its meetings should attract adequate attendances.

40. The Branch Council should contain in its membership representatives of all the organized bodies in its area, and so be able to speak with authority on behalf of the profession as a whole. It would, as occasion demanded, call together *ad hoc* groups of Divisions for the purpose of discussing matters of interest to the members of the Association within the group. The grouping would vary according to the circumstances for which the combination was used.

41. As a direct result of the modification of function the Branch itself would not have individual membership as at present. Nor would it be under obligation, as is the case at present, to call general meetings, either annual or ordinary, of members of the Association in its area. It would, however, reserve the right to call a general meeting of the members of the Divisions within the Branch area should this be deemed necessary, and the members, by virtue of their membership of the Divisions, would be entitled to attend any such meeting.

42. The Branch should maintain a close relationship with the member(s) representing the constituency in the Council and should take steps to ensure that he receives copies of all notices of meetings issued by the Branch and its Divisions and a special invitation to attend when any matter of import is under discussion or an important social function is taking place. This contact is most important as providing a ready means for keeping the Branch and its Divisions informed of central policy and action and with a channel through which they can make their views known to the Council and its Committees.

43. It is an accepted principle that an effective public relations machinery is essential to the success of any organized body, and this is equally true in the case of the local units of that body. From time to time questions arise in a particular locality which, though of little national interest, are of considerable concern to the profession. It is essential, therefore, that in all areas there should exist a public relations machine in good working order. The need for this will be felt more particularly in the Divisions, but, as the immediate parent body, the Branch should accept the responsibility for seeing that the machine is there and efficiently maintained. Moreover, the Branch should be prepared, if necessary, to set up its own public relations machinery, in effective contact with the central public relations department. In this way the Branch or its Divisions, as circumstances may determine, will be in a position to deal effectively and promptly with local matters as they arise.

44. Reorganization of the existing Branch system on a hospital regional basis would have important advantages. The profession as a whole over a large functional area would be able to speak with one voice and representatives of the different groups within the area could meet to discuss common interests. A closer link would be formed between hospital staffs and the Association, while not interfering with the existing regional machinery through which

consultants and specialists make their views known to their central negotiating bodies. It would help the member of Council representing the area and the member of the Headquarters medical secretariat appointed for the area to keep in close touch with their constituencies. It might be argued that there would be difficulty in arranging effective meetings in such large areas as hospital regions. This difficulty has, however, been overcome in the consultant field and there are good records of attendance at meetings of Regional Consultants Committees. Presumably other members would be prepared, on occasion, to travel relatively long distances, particularly as most regions are based on a university city, which is also a centre of communications. The proposed reorganization would, as indicated previously, have certain disadvantages, the chief of which is the inevitable conflict with long-established local tradition and loyalties. It is believed, however, that as in the past these difficulties will be overcome in the interest of the efficient working of the Association machine.

Function of the Branch

45. Implementation of the proposals for revision of the Branch organization involves a restatement of the functions of the Branch. At present these functions, as defined in By-law 25, are: (1) Co-ordination of the work of Divisions; (2) management of affairs of inactive Divisions, and their reactivation; (3) reporting to Council as to local conditions; (4) election of new members to the Association; (5) provision of Divisional funds out of grants from Headquarters.

46. The first of these functions—the co-ordination of the work of the Divisions—is an essential corollary to the main function of the proposed new Branch—namely, to unite the three branches of the profession into one body.

47. In pursuance of this duty (and following the majority view of the Divisions as ascertained by the Committee), the Branch should retain the responsibility for managing the affairs of inactive Divisions and facilitating their revival; it should also continue to report to the Council on conditions within the Branch area, without prejudice to the passing of information to Headquarters through other existing channels of communication, namely, through the Division, the local member of Council, and the Assistant Secretary assigned to the area.

48. As regards the other functions mentioned, many Divisions feel that the election of new members should be in their own hands and that in financial matters they should deal direct with the Central Office. The Committee has accepted in principle that the election of candidates for membership of the Association should rest with the Division, subject to certain reservations. These are, (*a*) that in the event of objection by the Division to the election of a candidate the matter should be referred to the Branch Council; and (*b*) that the election of newly qualified candidates for membership should be carried out by the Central Council. There are good reasons for placing the election of newly qualified candidates in the hands of the Central Council. These candidates are "birds of passage" during the first years of their professional career and particularly during the pre-registration year, which they must spend in two or more hospital appointments. It is essential that they should be brought within the sphere of the Association immediately on qualification and that their election to membership should not be subject to unnecessary delay. For this reason the Committee is strongly in favour of central election.

49. The Committee does not accept the suggestion that the existing method of financing the Divisions should be changed. It feels that so long as the Branch retains certain functions in respect of co-ordination of activities and the resuscitation of inactive units, it should retain the responsibility for financing the Divisions.

50. Stated briefly, the functions of the Branch under the revised constitution would be: *(1) To foster and maintain the unity of the profession within its area by means of exchange of views;* and, with this end in view, (2) To take appropriate and immediate action in support of any section of the profession within its area when requested to do so. (3) To report such action to Headquarters with a view to active measures by the whole profession if necessary. (4) To co-ordinate the work of the Divisions within its area. (5) To manage the affairs of inactive Divisions and promote their activity. (6) To organize special groups of Divisions for special purposes. (7) To provide the Divisions with funds, out of grants from Headquarters. (8) To be responsible for maintaining efficient public relations machinery, including the setting up of such machinery in any part of its area where the efforts of the Division have proved not to be effective. (9) To report to Council as to local conditions, without prejudice to other existing channels of communication. (10) To maintain an effective liaison with the members of Council representing the constituency. (11) To elect members of the Association when, and only when, referred by a Division within its area.

Scheme for Reorganization

51. Accepting the assumption that change is needed to meet changed conditions, the form of organization suggested retains the two-tier peripheral structure which has in the past formed such a successful part of the Association's constitution. In general, the regrouping of Divisions to form Branches conterminous with part or the whole of a hospital region presents no great difficulty, but flexibility is necessary to deal with the few exceptional circumstances. For instance, where, under the proposed scheme, a Division is not wholly included in one Branch area, it will have the right to choose to which of the two Branches concerned it will belong, but it will also be represented on the Council of the other. Also where, as in some areas, Divisions form a natural and clearly defined geographical unit, it may be necessary to regroup them either within or side by side the new Branch structure.

52. It is difficult in some areas to avoid a three-tier organization. This already exists in the case of the Scottish and Welsh Committees, but these Committees have special functions additional to those ascribed to the Branch in the preceding paragraphs. Wales is perhaps the simplest example of the need for compromise. Because of the difficulty of communication between north and south, the existing Branches may have to remain, while the Welsh Committee will assume the role of Regional Council. The Border Counties and the Metropolitan Counties Branches are also examples of a problem which cannot be solved by adherence to a rigid two-tier structure.

53. Further, where established Branches within a region wish to retain their identity they should be given the opportunity to do so, in spite of the fact that this may necessitate, on rare occasions, the setting up of Liaison Committees. Examples are: North of England and Tees-side Branches within the Northern Region; South-Western Branch within the South-Western Region; and Sussex and Border Counties Branches, which are each divided by regional boundaries.

54. The formation *ad hoc* of Liaison Committees for concerted action by the two Branches within a Region would not necessarily imply a three-tier organization. The Liaison Committee would not be an organized unit, but could be called together if and when need arose. If therefore, as seems unavoidable, a modified three-tier structure should be needed in certain areas—that is, Division: *existing Branch*: Regional Council—the question arises, which of the latter should take over the functions now envisaged for the Branch?

55. Clearly, for the sake of consistency, the word "Branch" should be retained to describe the new Regional unit. The problem remains to find a designation for the intermediate organized group of Divisions in those instances where the existing Branch wishes to retain its identity. This has proved very difficult, but in the detailed scheme appended the word "Group" has been used to indicate the retention within the new Regional unit of an existing Branch rather than an *ad hoc* functional group of Divisions formed for a specific purpose. In the main these Groups retain

the titles of the original Branches from which they are derived.

56. The proposed plan for reorganization of the Branches is appended (Appendix B). It will be seen that its effect is to reduce the number of Branches in Great Britain and Northern Ireland from 46 to 42. In Scotland there will be little change except for the elimination of the Division-Branch. In Northern Ireland there will be no change. The Groups may, or may not, prove to be permanent structures, depending on a number of factors such as tradition, ease of access, local options, etc.

57. The Committee recommends:

Recommendation 3: In order to maintain the unity of the profession within the Association in the changed circumstances created by the establishment of a National Health Service, the second tier unit—i.e., the Branch—should be reconstituted on a regional basis. The regions should, as far as possible, follow those of the Regional Hospital Boards under the National Health Service.

Recommendation 4: That the Branch, as reconstituted, should have as its main object the fostering and maintenance of the unity of the profession within its area. Its functions should, in effect, be those of the present Branch Council, modified and extended to meet present-day conditions. For this reason the Branch would not ordinarily hold meetings of the individual members in its area. Its main duty would be to call together its constituent Divisions, or the professional groups within its area, for an exchange of views. It would reserve the right to call a meeting of individual members on a particular occasion if deemed necessary or expedient.

Recommendation 5: That the functions of the Branch, as reconstituted, should be as follows, and that the necessary amendments to the By-laws be made to give effect to these proposals:

(1) *To foster and maintain the unity of the profession within its area by means of exchange of views.* (2) To take appropriate and immediate action in support of any section of the profession within its area when requested to do so. (3) To report such action to Headquarters, with a view to active measures by the whole profession if necessary. (4) To co-ordinate the work of the Divisions within its area. (5) To manage the affairs of inactive Divisions and promote their activity. (6) To organize special groups of Divisions for special purposes. (7) To provide the Divisions with funds, out of grants from Headquarters. (8) To undertake responsibility for the establishment and the maintenance of efficient public relations machinery in the Divisions within its area; and if necessary to establish Branch machinery. (9) To report to Council as to local conditions, without prejudice to other existing channels of communication. (10) To maintain an effective liaison with the member(s) of Council representing the constituency. (11) To elect members of the Association when, and only when, referred by a Division within its area.

Recommendation 6: That Article 3 and By-laws 5, 6, and 7 be altered to provide that the election of new members shall ordinarily be by Divisions with the right of reference to Branch Councils, save that in the case of newly qualified applicants election shall be by the Council.

Recommendation 7: That the (provisional) scheme for regrouping of Divisions to form Branches on a regional basis be approved.

Constituencies for Election of "Forty" Members of Council

58. The Committee has considered the effect of its proposals for reorganization of the Branch structure on the procedure for the election of the "forty" members of Council. Under By-law 55 the election is now carried out by constituencies formed by grouped Branches or Divisions. This procedure has proved satisfactory and there seems no logical reason for change, as the proposed Regional Scheme would continue to provide a rational grouping. The constituencies could be adapted to the proposed Branch structure with very little change and without altering the existing criteria, namely: one member of Council for a constituency of up to 1,600, two for a constituency of up to 2,600, etc. There is one exception. Because of the size of the area and particularly its peculiar geographical difficulties, it is proposed that the South-Western Branch, which on a strict numerical basis would be entitled to elect two members to the Council, should have a quota of three, one of whom will be elected by the Divisions in Devon and Cornwall. The effect of this variation will be to increase the number of directly elected members of Council from 40 to 41, and it will necessitate amendment of By-law 53, which specifies the constitution of the Council. The suggested regrouping is appended (Appendix C).

59. The Committee recommends:

Recommendation 8: That the revised grouping of Home Branches to form constituencies for the direct election of members of Council (Appendix C of Report) be approved; and that By-law 53 be amended so as to increase the number of such directly elected members from 40 to 41.

II. THE REPRESENTATIVE BODY

A. Constitution

(i) *Size of the Representative Body*

60. The terms of reference of the Constitution Committee conclude with the phrase "with special reference to the reorganization of the Representative Body." Paragraphs 3 and 4 of the Report set out in some detail the reasons which have led to the conclusion that this reorganization is due, if not overdue. Summarized they are:

(i) That the great increase in membership of the Association without alteration of the numerical basis of representation in the Representative Body has caused that Body to grow to a size which, in itself:

(*a*) hampers efficiency and makes it more difficult to complete, within the allotted time, an Agenda which has lengthened considerably following political developments affecting the profession; (*b*) severely limits the choice of place at which the Annual Meeting can be held, thereby depriving many Divisions of the privilege of acting as host to the Representative Body; (*c*) increases the number of potential speakers at the Meeting, thereby interfering with the conduct of business.

(ii) That with the growth in size the representation given to the larger Divisions under By-law 39 appears to be disproportionate in comparison with that of the smaller constituencies.

61. By-law 39, which determines on a numerical basis and with no maximum the number of Representatives to be returned to the constituencies, was drawn up when the membership of the Association was much smaller than it is to-day. In the circumstances then existing there was no danger of the Representative Body reaching a size which might hamper its efficiency or which might give rise to practical difficulty in the matter of accommodation. The present picture is entirely different—in 1956 the size of the Representative Body was approximately 500, as compared with 366 in 1938. In the view of the Committee the situation is now such that the Representative Body is unwieldy in character, with detriment to the efficient conduct of its business and with the risk that matters of vital importance to the profession may not receive the consideration they merit. Bearing in mind the debate in the Representative Body which preceded its formation, the Constitution Committee, after considerable discussion, has reached the conclusion that in order to secure maximum efficiency in the conduct of business a reduction in the size of the Representative Body is essential.

62. The Committee has given due weight to the following arguments which have been put forward in opposition to this view:

(i) Reduction in size with, in a large number of cases, reduction in the number of Representatives which a constituency may return, would exclude from participation in the Meeting younger members of the profession whom it is desirable to attract to central work. These members, while willing and anxious to accept appointment as Representatives in association with senior members of the Divisions, would not be willing to compete for appointment with their senior colleagues. Further, members of the Central Council and Committees are largely recruited from the ranks of the Representative Body, and restriction in size would limit the field of recruitment of central workers to the Association.

(ii) Reduction in size would not be accompanied by a comparable reduction in the number of speeches, for it is unusual for more than one Representative from a constituency to speak to a Motion.

(iii) The statement that the size of the Meeting leads to a loss of efficiency in the conduct of the business can be challenged, though an advantage in reduction in cost to the Association must be conceded.

(iv) The difficulty of finding accommodation is not sufficiently serious to warrant a reduction in size.

(v) Reduction in size would lead to a greatly increased demand for use of the Card Vote.

63. The Committee appreciates the argument that there might be some loss of educational opportunity through restriction in the size of the Representative Body, though it is not willing to accept the contention that such loss is inevitable. The proportion of younger members of the Representative Body has increased considerably in recent years, and there is no evidence that these members are appointed in the main by the large constituencies. Moreover, the Representative Body is not the only source of recruitment to central work. A substantial proportion of the members of Committees are elected by the Council and Branches, and Divisions should accept the responsibility for seeing that their representatives on the Central Council are kept informed of suitable candidates for appointment and should arrange for their nomination. Finally, the increase in size of the Branch Council which will result from the revised constitution of the Branches recommended by the Committee will provide increased opportunity for the keen younger member to become acquainted with the work of the Association, and to pass from peripheral to central work. The Committee does not admit the validity of the other arguments, and so far as the card vote is concerned the Committee proposes safeguards governing its use which it considers would obviate any risk of abuse of the procedure.

64. The Committee has reached the conclusion that the most suitable size for a body with an Agenda of the nature of that presented each year to the Representative Body is approximately 350. This number represents a satisfactory mean between an overlarge body and one which is too small to provide adequate representation. The Committee has examined alternative methods of representation of the U.K. Divisions within the suggested figure of 350, and it does not propose any alteration in the present system of basing constituencies on individual Divisions. Indeed, it maintains the view that, so far as possible, each Division of the Association in the U.K. should be a separate constituency and that reduction in the size of the Representative Body should not be brought about by an extension of the practice of combining Divisions to form constituencies. Having accepted this principle, the Committee has suggested an alteration of the numerical basis of representation to provide a Representative Body with a membership of approximately 350.

65. The Committee has considered various methods of proportional representation within the proposed overall membership, and the scheme finally adopted is shown in Appendix D, with the 1956 figures for comparison. *Under existing Regulations* each constituency is entitled to elect one Representative for a membership of less than 150, with one additional Representative for every extra 100 members or part of 100 above that number. *The proposed scheme* provides for one Representative for the first 200 members in a constituency and one additional Representative for every 250 members or part of 250 above that number. Allowing for Overseas Representatives and for the normal absentee rate, estimated to be in the region of 10%, this scheme would produce a Representative Body with a membership of approximately 350. The Committee is convinced that its proposals provide the only satisfactory way in which a suitable reduction in the overall size of the Representative Body can be achieved.

66. It may appear at first glance that adoption of the revised scheme of representation would entail considerable sacrifice on the part of the large Divisions, with no commensurate sacrifice on the part of the smaller Divisions. This is not so, for, as is shown in Appendix D, with the exception of the small constituency of under 150 members, sacrifice is entailed in every group. The Committee recommends:

Recommendation 9: (*a*) That the number of Representatives of Home Divisions in the Representative Body be reduced by an amount which will ensure an overall membership of that body of approximately 350. (*b*) That the Scheme for the formation of Home Constituencies for the appointment of Representatives to the Representative Body, set out in Appendix D, be substituted for that laid down in By-law 39; and (*c*) That By-law 39 be amended accordingly.

(ii) *Voting Strength*

67. In approving the scheme, the Committee has considered the possibility of dissatisfaction which might occur in large constituencies as a result of reduction in the number of Representatives which such a constituency might return, and also a suggestion made by one large Division that, in order to maintain proportional voting strength, the use of the card vote under By-law 49 should be extended to include not only matters of policy but also the election of Standing Committees. The Committee does not consider that its proposed scheme would seriously affect voting strength, but is of the opinion that the existing provisions for vote by roll call or by card should be retained.

(iii) *Card Vote*

68. Arising from this decision, the Committee has considered whether the demand for the card vote should be taken before or after the vote on a motion by show of hands. It was pointed out that in the latter case a card vote would probably be demanded only where the majority in favour of a motion on a straight vote had been a narrow one. It was further contended that the use of the card vote after the taking of an ordinary vote might, by reason of the voting strength of the large Divisions, result in a decision of the majority of the members of the meeting being reversed and action being taken which the Representative Meeting as a whole had declared by straight vote that it was not prepared to take.

69. Before coming to a decision, the Committee has examined the procedure adopted by other large bodies (e.g., the T.U.C. and the N.U.T.) in conducting their annual meetings. In most cases use is made of the card vote only as a challenge to a vote taken. After full consideration the Committee has decided that a similar system would be preferable in the case of the B.M.A., and that the card vote should be taken *after* the vote on the motion, on a demand by one-third of the Representatives present and voting. It is also the view of the Committee that the existing procedure in the By-laws for conducting the card vote, although time-consuming, is eminently satisfactory for the purpose for which it was designed and should be retained. The Committee recommends:

Recommendation 10: That By-law 49 be amended to provide that if, on a vote having been taken, a vote by card is demanded by one-third of the Representatives present, the vote shall be taken by card.

(iv) *Representation of Special Interests in the Representative Body*

70. The Committee has considered a request from the Central Consultants and Specialists Committee that it should appoint representatives to the Representative Body.

71. The main points submitted in favour of special representation are :

(i) It would increase confidence among consultants and specialists in the responsibility and authority of the Representative Body. The Representative Body is composed in the main of Representatives elected by Divisions with a majority of general practitioners in their membership. Consequently, the Representative Body is not fully informed of the problems confronting those engaged in the hospital and specialist service under the N.H.S. Act. On the other hand, the Central Consultants and Specialists Committee, whose duty it is "to consider and act" on matters affecting those engaged in the Hospital Service, draws its peripheral members (42 out of a total Committee membership of approximately 74) from the Regional Consultants Committees. These members, well versed in the problems arising in the Regions, have no direct access to the Representative Body, other than by "accidental" appointment as Representative by a Division.

(ii) Direct representation would enable the consultants and specialists to feel that they are taking a greater part in the framing of Association policy.

(iii) The burden on the Chairman of the Committee in presenting his report to the Meeting would be eased if he had the support and assistance of a small number of representatives appointed by his Committee. It may be argued that the Chairman of the General Medical Services Committee, who holds an analogous position in the field of general practice, finds no difficulty in obtaining adequate assistance from members of his Committee who represent Divisions in the Representative Body. For the reasons given this assistance is not available in the same way to the Chairman of the Central Consultants and Specialists Committee. Moreover, although there might be a small number of members of the Committee appointed to the Representative Body as Representatives of Constituencies, they might feel handicapped in dealing with consultant and specialist questions, being bound to some extent by the instructions of their Divisions.

(iv) There is a precedent for special representation in the Public Health field.

72. Against these arguments it has been claimed :

(i) That there is no evidence that the Representative Body is not effectively informed regarding questions relating to the hospital and specialist services.

(ii) That the Central Consultants and Specialists Committee itself represents many diverse interests and special Groups whose views could not be more effectively presented by the addition to the membership of the Representative Body of a very small number of members appointed by the Committee.

(iii) That extension of the principle of sectional representation would inevitably lead to demands from quite minor groups for representation of their special interests.

(iv) That there is no evidence that the representation in the Representative Body of those engaged in the hospital service or in specialist practice is inadequate. At the Glasgow Meeting in 1954 there were 75 consultant members, as compared with 281 general practitioners, thus giving adequate opportunity for expression of the consultant and specialist view. In these circumstances there could be no justification for special representation of consultants.

73. The Constitution Committee has discussed the need for special representation on a sectional basis with the Standing Committees which are concerned with defined fields of practice—namely, the Central Consultants and Specialists, General Medical Services, Public Health, Private Practice, and Occupational Health Committees. There is already provision for special representation of Public Health Service members, and the Public Health Committee regards the present position as satisfactory. Of the other Committees, the Central Consultants and Specialist Committee alone feels the need for appointment to the Representative Body of members who would speak as members of the Committee and not as representatives of their Divisions.

74. After protracted discussion, in which the Chairman of the Central Consultants and Specialists Committee has taken part, the Committee sees no reason to modify the principle that the Representative Body must be one predominantly representative of the Divisions. In the course of the discussion it has, however, become clear that the problem is one of presentation of special points of view rather than increase in the voting strength of a minority group. Numerical strength and voting power are secondary considerations, and in a body the size of the Representative Body a very small addition to the number of members would make no significant difference. The right of the specially appointed Public Health Service representatives to vote as members of constituencies has never been challenged.

75. The Committee feels that a strong case has been put forward, and that the advantages to be gained by acceding to the request of the Central Consultants and Specialists Committee outweigh possible disadvantages. Bearing in mind that a precedent for special sectional representation already exists, and that the chief aim is to effect a closer integration of an autonomous Committee with the Representative Body, the Constitution Committee suggests that provision should be made for the appointment of four Representatives by the Central Consultants and Specialists Committee. Accordingly, it recommends :

Recommendation 11 : That By-laws 38–44 (which deal with the composition of and election to the R.B.) should be amended to provide for the election of four members of the Association by the Central Consultants and Specialists Committee as Representatives in the R.B.

B. The Quorum of the Representative Body

76. The quorum of the Representative Body is at present "one-half of the number of representatives appointed to attend the meeting" (By-law 50). It has been suggested that, owing to the great increase in size of the Representative Body consequent upon the increased membership of the Association, this By-law is now unrealistic and is, in fact, honoured in the breach rather than in the observance. The Committee concurs with this view, and recommends :

Recommendation 12 : That the quorum of the Representative Body (at present "at least one-half of the number of Representatives appointed to attend the Meeting") should be reduced to 75 such Representatives.

C. The Conduct of Business at Representative Meetings

1. *Functions and Powers of the Agenda Committee*

77. *Constitution of Committee.*—The constitution of the Agenda Committee, as laid down in S.O.21 of the Representative Body, has been reviewed, and it is considered that no alteration is necessary. Under the Standing Order the Agenda Committee is composed of the Chairman and Deputy Chairman of the Representative Body, the Chairman of Council, and four members elected by the Representative Body. The Committee has power to co-opt up to four Chairmen of Standing Committees, having regard to the nature of the business coming before the Representative Body. The Committee recommends :

Recommendation 13 : That the existing constitution of the Agenda Committee, as laid down in S.O.21 of the Representative Body, is satisfactory and should be retained.

78. *Meetings of Agenda Committee.*—S.O.21 of the Representative Body provides that the Committee "shall meet at intervals during the Meeting to examine the progress made, and, if necessary, to make recommendations to the Meeting." The Committee is of the opinion that S.O.21 should be amended to provide that the Committee should

meet at a convenient time each day to review progress and business outstanding and to advise the Chairman. The Committee recommends :

Recommendation 14 : That S.O.21 of the Representative Body be amended to provide that the Agenda Committee shall meet during each day's session of the Representative Body, at a time to be arranged, to review progress and the business outstanding, and to advise the Chairman.

79. *Grouping of Motions.*—Under the Standing Orders, the Agenda Committee is empowered to group motions or amendments which cover substantially the same ground and to mark with an asterisk the motion in the group on which it proposes that the discussion should take place. The Representatives of the constituencies concerned may select this motion or an alternative motion in the group for discussion, or may agree on a common form of motion to cover the group. The Committee considers that the powers of the Agenda Committee should be extended to enable it to submit a common form motion in cases where it considers that the principle covered by the motions in the group is not adequately stated in any single motion. This would be without prejudice to the right of any Representative to speak to his original motion as an amendment to the common form motion. The Committee recommends:

Recommendation 15 : That the powers of the Agenda Committee under S.O.21 of the R.B. in respect of the grouping of motions or amendments be extended to enable it to submit a motion in a common form in cases where it considers that the principle covered by the motions in the group is not adequately stated in any single motion ; such extension of power to be without prejudice to the right of any Representative to speak to his original motion as an amendment to the common form motion.

80. *Priority Motions.*—The Committee has discussed a proposal for the institution of "priority motions" which would be debated at stated times in the proceedings. Where a motion related to a Committee Report was given priority it would be taken at the time stated and the remainder of the Report in its due order at a later stage in the proceedings. The priority motions would be printed on a separate sheet in addition to appearing in their appropriate place in the main Agenda. Against the proposal, it was suggested that the breaking up of the work of a Committee into priority motions and "the remainder" might embarrass the Chairman of the Committee concerned and the continuity of his work, with detriment to the proceedings of the Meeting.

81. The Committee has decided, therefore, not to recommend any hard and fast rule, but that provision should be made for the introduction, as necessity requires, of a scheme of priority motions on the lines indicated to deal with questions of outstanding importance. The Committee recommends:

Recommendation 16 : That the Agenda Committee be empowered, as necessity arises, to give priority to motions on questions of outstanding importance and to arrange for these to be debated at specified times.

82. *Pruning of Agenda.*—The possibility of elimination from the Agenda of motions submitted by Divisions on matters which had already been the subject of action by Central Committees has been discussed. It was suggested that the Agenda Committee should be given power to inform a Division submitting a motion of this kind of the action already taken, and that, unless the Division wished to oppose that action or could offer a reason satisfactory to the Agenda Committee for proceeding with the motion, it would be excluded from the Agenda. However, considerable doubt was expressed in the Committee regarding the wisdom of so curtailing the liberty of the Divisions in this way. The number of such motions must in the nature of things be small, and there is much to be said for their inclusion in the Agenda in order that the Division concerned may be given an opportunity to ventilate some matter which *it* considers important. A proportion of the motions might be eliminated by reference to the appropriate member of the central secretariat, who would inform the Division of the action already taken, or by consultation during the course of the Meeting with the Chairman of the Committee, as a result of which the motion might be withdrawn. The Committee recommends:

Recommendation 17 : That elimination from the Agenda of the Representative Meeting of motions submitted by Divisions on matters which have already been the subject of action by Central Committees is not advisable ; and that Divisions should retain the right to submit to the Representative Body motions on any matters which they consider of sufficient importance for debate.

83. *The Order of the Agenda.*—Standing Order 21 lays down the procedure for the placing of motions on the A.R.M. Agenda. The Standing Order instructs the Agenda Committee

". . . so to arrange the Agenda that *only* those motions by Divisions and Branches *strictly relevant* to the several paragraphs of the Annual or Supplementary Reports of the Council be considered with such paragraphs ; and that all motions by Divisions or Branches on matters not strictly relevant to any paragraphs of the Annual or Supplementary Reports of the Council be placed in appropriate order on the Agenda after the motions proposing final approval of the Annual and Supplementary Reports of the Council have been considered. Provided always,

"(A) That motions by Divisions or Branches which call for reports on matters previously referred to Council shall be placed on the Agenda before motions proposing the approval of Annual or Supplementary Reports of Council. . . ."

84. In giving effect to the Standing Order, it has been the practice so far as this is possible to relate *all* motions submitted for the Agenda to individual paragraphs of the Annual Report of Council. As in a number of instances the relationship is extremely vague, this procedure involves the expenditure of considerable time and ingenuity. The Committee recommends:

Recommendation 18 : That the procedure laid down in S.O.21 of the Representative Body should be strictly observed.

2. *Time Limit of Speeches and Presentation of Report by Chairmen of Committees*

85. The time limit of speeches is laid down in Standing Order 31 of the Representative Body—15 minutes for a Chairman of a Committee in presenting his Report ; seven minutes for the mover of a resolution ; five minutes for other speakers. There is no provision for extension of time, but it has been the custom to allow a Chairman of a Committee to overrun the time limit, at the discretion of the Chairman of the Representative Body and with the permission of the Meeting. In order better to control the proceedings, the Committee is of the opinion that S.O.31 should be amended so as to limit the amount of extended time given. It therefore recommends:

Recommendation 19 : That the Chairman of a Committee may on request to the Chairman, *before presenting his Report,* and with the permission of the Meeting, be granted an extension of time up to half the period allowed under S.O.31 for presentation of the Report, save that in exceptional circumstances he may be granted such further extension of time as the Meeting itself shall predetermine.

It is not proposed that there should be any alteration in the times of other speeches as laid down in the Standing Order.

86. In connexion with the foregoing, the Committee has considered the custom which has grown up in recent years of allowing a Chairman, on the motion for reception of his Report, to speak to the whole of the Report, notwithstand-

ing the fact that there might be included in the Agenda motions relating to particular paragraphs on which he would have a further opportunity of speaking. Further, where amendments to particular paragraphs of the Report are concerned, it is necessary (under present practice) for the Chairman of the Committee to move the adoption of the relevant paragraph before the amendment is put to the Meeting. As he also has the right to speak to the amendment if he so desires, both the Agenda and business of the Meeting are lengthened.

87. The procedure laid down in S.O.24 of the Representative Body in respect of the presentation of Reports is as follows:

"24. Presentation of Reports.—The Report of the Council or of a Committee shall be presented by the Chairman, or, in his absence, by a Member, of the body submitting such Report, who shall move: (i) that the Report be received; (ii) that the Recommendations, if any, be adopted; (iii) that the rest of the Report be approved. The adoption of each Recommendation shall be the subject of a separate motion. The approval of the rest of the Report shall be moved as a whole, unless the Chairman rule, or the Meeting resolve, that the approval of each paragraph, or of any specified paragraph, be the subject of a separate motion."

The Committee recommends:

Recommendation 20: That the procedure laid down in S.O.24 of the R.B. for presentation of Reports should be adhered to strictly and that the practice of moving the adoption of individual paragraphs of the Report of Council to which amendments are proposed, before the amendment is moved, should be discontinued except in the circumstances indicated in the Standing Order.

3. *Public and Private Sessions of the Representative Body*

88. The Committee has reviewed the practice of some other bodies of holding both public and private sessions. It considers, however, that the existing method of "going into Committee" by the Representative Body on the rare occasions when it is desired to exclude the Press is adequate, and that no action is necessary.

4. *Other Proposals*

89. The Committee's attention has been drawn to the difficulty experienced by the Chairman while conducting the Meeting in dealing with amendments handed up to the platform, in that his attention may be, and often is, distracted from an important debate in progress. In order to facilitate the proceedings of the Representative Body arrangements are to be made for a member of the medical secretariat to be available to the Representatives to receive amendments submitted from the body of the Hall, to examine and advise upon them in the first instance and to pass them to the Chairman.

90. Other suggestions for reducing the burden of work now falling on the Representative Body have been considered. These include a proposal that there should be two meetings of the Representative Body—the first at the London Headquarters at a fixed time each year to deal with motions relating to domestic matters; and the second in conjunction with the Annual Meeting to deal with matters of major Association policy. After careful examination the Committee does not consider such a proposal to be practicable or advisable and is firmly of the view that the existing procedure whereby the Representative Body meets in one complete session should be retained. Similarly the Committee has rejected a proposal that in order to make it possible for the A.R.M. to take place on a prescribed date each year it should invariably be held at Headquarters in London.

III. GENERAL MEETINGS OF THE ASSOCIATION

91. These Meetings, which are prescribed in the Articles of the Association, fall into two categories—(*a*) the Annual General Meeting, and (*b*) Extraordinary General Meetings.

Annual General Meeting

92. As the name indicates this meeting must be held in each calendar year in addition to any other General Meetings held, and not more than fifteen months must elapse between the date of one Annual General Meeting and the next. The notice to be given and the business to be transacted is clearly defined in the Articles and it is the duty of the Council to arrange the order of the items of business and the times at which they shall be transacted.

93. The Committee has scrutinized in detail the terms of the relevant Articles and is of the opinion that they do not call for revision.

Extraordinary General Meetings

94. These are all General Meetings other than the Annual General Meeting of the Association. Under the Articles the Council has power to call an Extraordinary General Meeting at any time at its discretion and must call such meeting upon a requisition in writing, made under conditions prescribed in the Articles, by 100 or more members. The requisition and notice must state the object for which the meeting is called.

95. In May 1953 an Extraordinary General Meeting was called on requisition on a matter arising out of the Distribution Scheme which followed the Danckwerts Award. The circumstances revealed an anomaly in the Articles of the Association. It appeared that a resolution of an Extraordinary General Meeting called on requisition under the terms of Articles 24–26 which was opposed to a policy resolution adopted by the Representative Body would be invalid and ineffective under the terms of Article 37. Article 37 vests in the Representative Body "the general control and direction of the policy and affairs of the Association." This interpretation of the Articles was confirmed by Counsel as correct, and in these circumstances he was asked to advise as to the possibility of so amending the Regulations as to make it impossible for an Extraordinary General Meeting to be requisitioned for consideration of a matter within the province of the Representative Body as defined by Article 37. Counsel's opinion is that the Articles can validly be altered as suggested and he has advised as to the form of resolution to be used. This is incorporated in the recommendation which follows. In expressing his opinion, Counsel has pointed out that there might be difficulty in interpreting the Article as amended in a particular case.

96. The Committee feels that the existing position is quite illogical and that any possible difficulty of interpretation in a particular case should not be allowed to stand in the way of regularizing the situation. Moreover, it should not be overlooked that it is within the power of members of the Association who are dissatisfied with Association policy to demand the calling of a Special Representative Meeting. By-law 46 reads:

"46 (1) Representative Meetings, other than the Annual Representative Meeting, shall be styled Special Representative Meetings, and shall be convened at any time by the Chairman of the Representative Body on the requisition of the Council, or on the requisition of not less than twenty Constituencies. (2) At least fourteen days' notice of such Meeting shall be given in the *Journal*, and such notice shall indicate the object for which such Meeting is convened. (3) No business shall be dealt with by a Special Representative Meeting other than that for which it is specifically convened."

97. The Committee recommends:

Recommendation 21: That the Articles of the Association be altered by adding at the end of Article 24 the following words:

"for the purpose of considering any matter other than a matter which affects the general control and direction of the policy and affairs of the Association."

(As amended the Article would read: "24. The Council may whenever it thinks fit and (without prejudice to the provisions of the Companies Act, 1948) it shall upon a requisition made in writing as hereinafter provided by any one hundred or more Members convene an Extraordinary General Meeting for the purpose of considering any matter other than a matter which affects the general control and direction of the policy and affairs of the Association.")

IV. THE ANNUAL SCIENTIFIC MEETING

98. Article 30 instructs the Council to arrange at least once a year a Scientific Meeting: one such meeting to be convened at the same place as the Annual General Meeting of the Association but so as not to conflict with it. By long custom this Annual Scientific Meeting has followed immediately upon the Annual Representative Meeting. It has been suggested that this custom detracts from the importance of the Scientific Meeting in that the attention of the press is focused on the medico-political proceedings, with possible restriction of the publicity given to the scientific activities of the Annual Meeting and a loss of prestige to the Association as a body having as one of its main objects the "promotion of the medical and allied sciences." Further, the Annual Representative Meeting in 1955 requested the Council (Minute 270) "to investigate the possibility of combining the Scientific Meeting and the Annual Representative Meeting so that all members of the Association might have the opportunity of taking part in both the scientific and the medico-political activities of the Association."

99. Two possible methods of dealing with the problem have presented themselves to the Committee, and these have been examined in considerable detail. They are: (*a*) that the Scientific Meeting should be held concurrently with the Annual Representative Meeting, and (*b*) that the present order of the two meetings should be reversed and the Annual Scientific Meeting be held immediately preceding the A.R.M.

100. There are practical difficulties in the way of adopting the first suggestion, and these fall mainly into two categories: (i) the time factor; (ii) the additional accommodation required. The effect of holding the two meetings concurrently would be to lengthen the period of the proceedings, and to ensure success all those attending, whether at the A.R.M. or at the Scientific Meeting, would be compelled to remain for the whole period. Quite apart from the expense involved, it is extremely unlikely that many Representatives would find it possible to be away from their practices for so long, and the strain on the hotel accommodation, already acute in most of the places in which the Annual Meeting is held, would be such as to make the situation extremely difficult.

101. This avenue having been exhausted, the Committee next turned its attention to the proposal that the Annual Scientific Meeting should precede the A.R.M.; but here again it was faced with insuperable difficulties. It has examined various schemes for rearranging the major events of the Annual Meeting—business, scientific, and social—but has been unable to find one which would meet the convenience of those attending the Scientific Meeting and the Annual Representative Meeting but would not at the same time jeopardize the success of some of the events considered indispensable to the Meeting and of the various evening functions.

102. The Committee has reluctantly been forced to the conclusion that any attempt to vary the present order of the proceedings of the Annual Meeting would create more anomalies than it would solve, and that the difficulties inherent in arranging a satisfactory programme are such as to outweigh any possible advantages. Its considered view is that the existing arrangements should be retained. Another possible method of bringing the scientific activities of the Association into their right perspective is, however, dealt with in the following paragraph of this report.

A Second Scientific Meeting

103. It is proposed that there should be held annually a second scientific function, short, concentrated, and of high professional standing. The meeting would occupy a long week-end, would take place midway between Annual Meetings as the most suitable time (i.e., early in December) and would normally be held only in those towns which could not accommodate the Annual Meeting of the Association. The number attending would vary with the town chosen, but it is estimated the average would probably be in the region of 250 visitors, with an equal number from the area.

104. The programme might take the following form: One Plenary Session. One General Session. Two Round-Table Conferences. Clinical Demonstrations in hospitals, clinics, etc. Medical films, or possibly clinico-pathological conferences.

105. Speakers at the plenary and general sessions would be chosen on a national basis. There would be no individual Scientific Sections. Sessions would not be permitted to overlap, in order to ensure a good audience. Clinical demonstrations would be staged in small batches by the local profession.

106. There would be an initial social evening function, but no further social events. Those attending would make their own hotel arrangements, and it is hoped that private hospitality would be available for those desiring it.

107. As the requirements of the meeting would be modest in nature the cost to the Association would be moderate—possibly an average of £200 or even less. Equally the cost to those attending, apart from travel, would be low and within the means of the majority of practitioners, including the young and less well-to-do.

108. The advantages of the Meeting would be considerable:

(*a*) to the Association in an increase in scientific status, both within the profession, with the professional organizations, and through the press with the public;

(*b*) to B.M.A. members in the provision of a concentrated meeting of high scientific attainment at lost cost;

(*c*) to the local B.M.A. units, in demonstrating to members and others living in the area that the Association has a direct interest in the individual member and in his clinical activities. The member would be afforded the opportunity to meet and hear some of the most eminent in the profession and also of making contact with practitioners from other parts of the country. The importance of the local Division would be enhanced, and a closer and more intimate relationship would be established between the Division and Headquarters. Local interest in the activities of the Association would be stimulated and the various branches of the profession in the neighbourhood would be brought into closer contact in organizing the programme.

109. The Committee strongly supports the proposal for a second Scientific Meeting on an experimental basis and for a limited period.

110. The Committee recommends:

Recommendation 22: That modification of the existing arrangements for holding the Annual Meeting of the Association having been examined and found impracticable, the existing arrangements be retained.

Recommendation 23: That a Second Scientific Meeting of the Association be held at an appropriate time during the year; and that the Council be empowered to draw up and to put into operation a scheme for such a meeting.

V. THE COUNCIL

Constitution

111. The Council is the executive of the Representative Body and is required under By-law 64 to meet not less than four times in each year. The Council elects its own Chairman, who holds office for such period as the Council itself determines.

112. Until 1949 the Council was composed of 66 members elected as follows:

(*a*) 10 *members ex officio*—namely, President, Immediate Past-President, and President-Elect of the Association, Chairman, Immediate Past-Chairman, and Deputy Chairman of the Representative Body, Chairman and Immediate Past-Chairman of the Council, Treasurer and (during the year immediately following his period of office as Treasurer) the Past-Treasurer.

(*b*) 22 *members* elected by members of the Branches in Great Britain and Northern Ireland grouped for the purpose.

(*c*) 8 members similarly elected by the Branches *not* in Great Britain or Northern Ireland.

(*d*) 12 *members elected at the A.R.M.* by the grouped Representatives of the Constituencies in Great Britain and Northern Ireland.

(*e*) 8 members elected at the A.R.M. by the Representatives acting together.

(Total $d+e=20$.)

(*f*) 3 Service members, representing respectively the Royal Navy, Army, and Royal Air Force Medical Services elected by the A.R.M.

(*g*) 2 members elected by the Public Health Service members of the Association.

(*h*) 1 woman member elected by the women members of the Association.

Total : 66 Members.

113. In 1948 there was evidence of a fairly widespread feeling that the Council was to some extent out of touch with the rank and file of the profession and a demand arose for its reconstitution in order to ensure more effective representation of the periphery. Accordingly, in 1949 changes were made which had the effect of almost doubling the number of members directly elected by constituencies, while reducing by nearly half the number elected by the Representative Body. The present constitution of the Council (77 members) is as follows:

(*a*) 11 members *ex officio*—namely, President, Immediate Past-President, and President-Elect of the Association, Chairman and Deputy Chairman of the Representative Body, Chairman and Past-Chairman of the Council (in the year following the year in which he ceased to be Chairman of Council), Treasurer, *Chairman of Central Consultants and Specialists Committee,* Chairman of General Medical Services Committee,* Chairman of Journal Committee.**

(*b*) 40 *members* elected by the members of the Branches in Great Britain and Northern Ireland grouped for the purpose.

(*c*) 7 members similarly elected by the Branches not in Great Britain or Northern Ireland (one less than formerly).

(*d*) 2 *members elected by Representatives* of Constituencies in Scotland.

(*e*) 1 *member elected by Representatives* of Constituencies in Wales, including Monmouthshire.

(*f*) 10 *members elected at the A.R.M.* by the Representative Body as a whole.

(Total $d+e+f=13$.)

(*g*) 3 Service members, representing respectively the Medical Branch of the Royal Navy, the Army Medical Service, and the Medical Branch of the Royal Air Force elected by the Representative Body as a whole.

(*h*) 2 members elected by the Public Health Service members of the Association.

(*i*) 1 woman member elected by the women members of the Association.

Total: 77 Members.

114. The Constitution Committee has endeavoured to assess the results of the changes introduced in 1949. These have not been in operation long enough to determine whether they have been wholly successful in achieving the objects desired, but the evidence available to the Committee suggests that there is both sufficient continuity of membership and introduction of "new blood" to justify the conclusion that the present constitution of the Council is satisfactory. It is now possible for a member of Council elected by a constituency to keep in touch with all the units he represents; this was frequently quite impossible before the changes were introduced.

115. The Committee has examined several suggestions submitted with the object of increasing the representative character of the Council. For instance, it was proposed that, to ensure that the members were elected by a well-informed electorate, the majority of the members should be elected by the Representative Body. The Committee does not think this would be acceptable in view of the recent change nor that it would bring members of Council in closer touch with members in the Divisions.

116. The Committee has considered the possibility of direct representation of young practitioners. It feels that it would be extremely difficult to provide an electorate for such a category and that suitable nominees might not be able to spare the necessary time. Young practitioners already take a part in the central work of the Association through at least three of the Standing Committees—the General Medical Services, Central Consultants and Specialists, and Organization Committees, and by this means their views do reach the Council. For these reasons the Committee does not recommend that young practitioners should have a seat in the Council. It is making proposals through another channel for solving the special problems of this section of the Association's membership.

117. The Committee has considered a return to the rule which limited the tenure of office of members of Council elected by constituencies to six years. This was abolished in 1949, when an alternative method of securing continuity was discontinued. The Committee sees no reason for reintroducing the limitation.

118. Lastly, the Committee has reconsidered a suggestion, made on more than one occasion in the past, that the procedure operative in Local Government circles should be adopted in the Council of the Association. Under this procedure, three members would be elected by each constituency, each would be limited to a tenure of three years, one retiring each year. After careful consideration the Committee has decided that any advantages to be gained by such a proposal are insufficient to justify the radical changes in the constitution which would be required. It recommends:

Recommendation 24: That no change should be made in the constitution of, and the methods of election to, the Central Council of the Association.

Presentation of Committee Reports to Council

119. By-law 78 provides that each Standing Committee shall elect a Chairman, and, if the Chairman is not a member of the Council, a Deputy Chairman who is a member. Standing Order 10 of the Council places the duty of presentation of the Report of a Committee on the Chairman of that Committee, or in his absence on a member of the Committee. Where the Chairman is not a member of the Council, the duty of presentation falls upon his Deputy.

120. Representations have been made to the Committee that Chairmen of Committees (Standing or Special) who are not members of the Council should be allowed, if they so wish, to present their Committee Reports in person. The Committee does not favour this proposal. Under existing procedure it is within the discretion of the Chairman of Council, on the request of a Committee whose Chairman is not a member of the Council, to invite the Chairman of the Committee to introduce and speak to the Committee Report in the Council. The Constitution Committee feels that this procedure adequately meets the situation and that there is no necessity for a special rule.

VI. COMMITTEES AND STANDING COMMITTEES

121. Committees are appointed by the Representative Body or by the Council or both jointly. The chief officers of the Association are members *ex officio* of all Committees. This provision places a heavy burden on the officers concerned. The number of Committees is very large and tends to increase and it is manifestly impossible for them to attend all meetings. Nevertheless the Committee is firmly of the opinion that the provision should be retained, as it places at the disposal of the officers useful information regarding all fields of the Association's work.

*Additions. The Past-Chairman of the Representative Body and Past-Treasurer are no longer members of Council *ex officio*.

122. Committees are divided into two classes, Standing Committees and Special Committees. At present there are 18 Standing Committees and approximately the same number of Special Committees. Under the By-Laws certain Standing Committees have authority to include in their membership persons not members of the Association. By implication and practice this authority is also extended to Special Committees.

123. The Standing Committees are, under the Articles and By-laws, an integral part of the Association's constitution. Their composition, powers, and duties are defined in a Schedule to the By-laws. The majority of their members are, in general, appointed as to part by the Representative Body and as to part by the Council. They have power to call to their assistance for special purposes persons specially qualified to assist in any matter coming within their purview. They are required by the By-laws to report to and act under the instructions of the Council and their meetings are held according to a schedule prescribed at the beginning of each session.

124. Special Committees are appointed annually *ad hoc*, and their number may vary from time to time according to the creation of new Committees or the completion by others of their terms of reference. The majority of these special committees (for example, Compensation and Superannuation, International Relations) are more or less permanent in character, but the specialized nature of their work makes it advisable to keep them as special committees rather than Standing Committees, with the emphasis on selection rather than election of their members. In addition, there are a number of Joint Committees, such as the Joint Committee of the Royal Colleges, the Royal Scottish Corporations, and the Central Consultants and Specialists Committee; the Joint Formulary Committee of the B.M.A. and the Pharmaceutical Society; the Joint Committee of the B.M.A. and the Trades Union Congress, etc.

125 The Constitution Committee, which is itself an example of a special committee established by the Council and the Representative Body for a specific and limited purpose, has reviewed the constitution and terms of reference of all the Committees of the Association. It is satisfied that the present Committee machinery is, in general, adequate and suitable for the purpose for which it has been established, and that no alteration in the structure is called for. It has, however, ascertained the views of the Committees regarding the details of their composition and references, and certain of the Committees have made proposals for modifications of their constitution as follows:

Charities: This Committee is composed of members elected as to 4 by the Representative Body (including 1 from Scotland and 1 from Wales) and 2 by the Council; together with the representatives of the Council of Epsom College and the Committee of Management of the Royal Medical Benevolent Fund.

It is desired to make the membership more comprehensive by adding 2 representatives of the younger members of the profession, nominated as to 1 each by the Central Consultants and Specialists and General Medical Services Committees; and the duly appointed representative of the B.M.A. on the Joint Committee of Epsom College.

Finance and *Journal:* These Committees include in their membership in each case 4 appointed by the Representative Body. Under Standing Order 52 of the Representative Body only Representatives may be nominated for appointment in this category. This restriction applies in only one other Committee—the Organization Committee, which has raised no objection. The Finance and Journal Committees desire that the restriction should be removed, in order that the Representative Body may have a free field in electing its members to these Committees.

Private Practice: The reference to this Committee as at present worded is: "To consider and report on matters affecting the profession in the field of private practice not specially referred to other Committees, etc." The Committee feels that its reference could with advantage be amended to make it clear that the phrase "private practice" includes private consulting as well as private general practice; it also suggests that as it is the only Committee appointed by the Association to consider matters affecting the profession in the field of private practice the words "not specially referred to other Committees" should be deleted.

Public Health: The Committee desires to extend its reference, at present restricted to "consideration of and report on questions relating to the Public Health services," to include the field of preventive medicine.

126. The Constitution Committee supports the above proposals and recommends:

Recommendation 25: That steps be taken to amend the Schedule to the By-laws in respect of the following Standing Committees in the manner indicated:

Charities Committee: To add to the membership 2 representatives of the younger members of the profession nominated as to 1 each by the Central Consultants and Specialists and General Medical Services Committees; and the duly appointed representative of the B.M.A. on the Joint Committee of Epsom College.

Private Practice Committee: To substitute for the first sentence in the existing reference the following: "To consider and report on matters affecting the profession in the field of private general or consulting practice."

Public Health Committee: To substitute for the first sentence in the existing reference the following: "To consider and report on questions relating to preventive medicine and the Public Health services."

Recommendation 26: That steps be taken to amend Standing Order 52 of the Representative Body by the deletion of the reference to the Finance and Journal Committees.

Scottish Committee

127. The Scottish Committee seeks to change its title to "Scottish Council." The Committee is satisfied that it would be an advantage to the Association in Scotland if this change could be effected, and that it would be in a very much stronger position in relation to the autonomous bodies in Scotland and also to the Department of Health. At present exchanges between the Scottish Committee and the Scottish Department of Health and other bodies are carried out mainly by special subcommittees of the Scottish Committee, and the name "Subcommittee" is a disadvantage in that it suggests inferior status. These subcommittees would be in a much more advantageous position as Standing Committees of a Scottish Council. It is claimed that the Scottish Committee differs from other Standing Committees in that it is, in part, elected by the Divisions in Scotland, and is therefore analogous to the Federal Council in Australia. The Committee states emphatically that the proposed change of title, while it would increase the prestige of the Association in Scotland and give great satisfaction to Scottish members, would not affect in any way the status of the Committee *vis-à-vis* the Council of the Association, nor need there be any confusion through the use of the word "Council"; this being always qualified by the prefix "Scottish." The proposed change would not affect the relationship between the General Medical Services Committee and the General Medical Services Subcommittee (Scotland). This is and would remain a Subcommittee.

128. The Committee recommends:

Recommendation 27: That the proposed change of title from "Scottish Committee" to "Scottish Council" be approved and that the Schedule to the By-laws be amended accordingly.

Liaison Between Committees

129. Under existing references it is possible for two or more committees to consider and take different action upon one

and the same subject, which may be one involving policy. This is particularly so in the case of resolutions of the Representative Body referred by the Council to more than one committee. The normal procedure is for the Committees concerned to consult one another before reporting to the Council or taking action, but such consultation is not mandatory. By-law 80 provides that any Committee may, in respect of any matter before it, consult or make any report or suggestion to another Committee of the Association, etc., but there is nothing in the By-law to preclude unilateral action by one Committee in a matter of import to another.

130. The Consultation Committee proposes that the situation should be safeguarded by amendment of the By-law and it recommends:

Recommendation 28: That By-law 80 be amended to provide that every Committee *shall*, in respect of any matter before it which is of special interest to another Committee of the Association, consult that other Committee. In the event of disagreement no action shall be taken without reference to the Council.

VII. THE POWERS OF THE AUTONOMOUS BODIES

131. The Constitution Committee has reviewed the position of the autonomous committees and in particular the position of the Central Consultants and Specialists Committee in relation to the joint negotiating machinery for hospital and specialist services.

132. The term "autonomous bodies" derives from the fact that the Council and Representative Body have delegated to the two Committees concerned, the General Medical Services and the Central Consultants and Specialists, certain powers of independent action within their terms of reference. The effect of this is to give them a measure of autonomy not enjoyed by the other Standing Committees. This situation has been brought about by the need to adjust the Association's medico-political machinery to the changes, previously referred to in this report, due to the extension of the responsibility of the State for health and welfare. In 1950 the Representative Body reviewed the situation, and after full consideration of all the circumstances, reached the conclusion that no useful purpose would be served in disturbing the existing arrangement. In doing so it declared that the autonomous powers of the two Committees, in so far as they derived from the Representative Body, should be subject to specific renewal by successive Annual Representative Meetings. This policy has been strictly observed.

133. Notwithstanding their autonomous powers, the Committees remain an integral part of the Association machinery. They report regularly on action taken or proposed to the Council of the Association and, through the Council, to the Representative Body, where their Reports are subject to criticism or approval, as are the Reports of other Association Committees.

134. The Constitution Committee considers that present practice, under which the autonomy is subject to annual renewal, provides a sufficient safeguard against divided counsels and disunity in matters of policy in the profession. It notes with satisfaction the decision of the Central Consultants and Specialists Committee to convene an Annual Conference of Regional Consultants Committees and believes that this Conference, if so constituted as to be truly representative of consultants and specialists and hospital staffs throughout the country, will lead to a closer relationship between the organized body of consultants and the Council and Representative Body of the Association and to a mutual increase of confidence.

135. The Committee takes the view that, as the Representative Body has given the various sections of the profession autonomy not only of discussion but of action, its role in relation to these sections should be to consider a report of action taken or proposed, to measure this against the problems of other sections of the profession, and to use the whole weight of the B.M.A. in carrying out that action as policy of the Association and not merely that of a negotiating committee. The opinion of the profession as a whole, exerted through the Association, is the prevailing factor in negotiations with the Government.

136. The Committee considers that the partnership between the Royal Colleges and the Association in joint negotiating machinery in connexion with the hospital services should continue. The Joint Committee as at present constituted is recognized by the Government as the negotiating body for hospital staffs, and in Whitley Committee B a working arrangement with the Royal Colleges is essential. The Committee considers that there should be no change at present in the existing joint machinery for consultants and specialists.

137. The Committee recommends:

Recommendation 29: (*a*) That the existing relationship of the autonomous bodies to the Association should be continued, subject to ratification annually by the Representative Body of the powers of these bodies. (*b*) That the arrangement under which the Joint Committee between the Central Consultants and Specialists Committee of the B.M.A. and the Royal Colleges and the Scottish Royal Medical Corporations acts as the negotiating body with the Government in respect of those engaged in the hospital and specialist service under the N.H.S. should be continued.

VIII. THE CONSTITUTION AND ORGANIZATION OF SPECIAL GROUPS

138. The Council is empowered under By-law 37 and in accordance with Article 21 to form (and to dissolve) special groups of members "having distinctive professional interests and being, by reason of their paucity of numbers or of their local distribution, unable to obtain adequate representation of these interests through the Divisions and Branches." The first special Groups were established in 1927 and numbered two, Pathologists and Spa Practitioners Groups. Since then the number of groups has steadily increased and they now number fourteen. With the possible exception of the Non-Professorial Teachers Group, all are closely linked to the Hospital and Specialist field and except for the Registrars and Senior Hospital Medical Officers are aptly designated "Clinical Groups," in that they deal with questions peculiar to particular specialties.

139. Since the establishment of the National Health Service there has been a departure from the original principle underlying the Group structure. Problems arising in the Hospital Service have led to applications for the formation of "Non-clinical Groups" of officers employed in that Service. The Constitution Committee regards with some favour the Scottish practice of dealing with special problems arising in connexion with the Hospital and Specialist Service through special subcommittees of the Central Consultants and Specialists Committee (Scotland), subject, as in Scotland, to adequate representation of the practitioners concerned at regional level. It realizes, however, that there is a risk in this procedure of the establishment of "splinter specialist societies" if the formation of a Group, which the members concerned considered essential to the effective protection of their interests, should be refused.

140. There are already precedents for a different method, analogous to the Scottish arrangement, for dealing with special interests. The assistants and unestablished practitioners, who, under the existing Rules, had a prima facie case for the establishment of a Group, have accepted an arrangement whereby the members of a special subcommittee of the General Medical Services Committee are elected on a regional basis and regard themselves as to some extent responsible to their constituents. The advantage of this procedure is that representatives of the parent Committee are members of the Subcommittee and take part in its discus-

sions. This advantage is not apparent when, as in the case of the special Groups, the report to the parent Committee and recommendations on matters of policy have to be presented by a deputation or by an elected representative on the Committee. It is not without significance that, following an application for the formation of a Group of Forensic Pathologists, the Subcommittee procedure has been adopted, and there has been established a Forensic Medicine Subcommittee of the Private Practice Committee with the following constitution: 3 members of the parent Committee, 3 police surgeons, 3 forensic pathologists, with power to co-opt 3 additional members.

141. The organization and status of special Groups is a matter which closely concerns the Central Consultants and Specialists Committee, and the Constitution Committee has had regard to the views of that Committee on this question. The Constitution Committee is in favour of future developments following the precedents recently established, and regards the subcommittee system as appropriate in the case of Registrars and S.H.M.O.s. It does not, however, recommend any alteration in the structure of other Groups already established unless in agreement with the Groups concerned.

142. The Committee recommends:

Recommendation 30: (*a*) That no new Group should be formed, but if the need should arise for consideration of problems relating to any special interest the need should be met by the formation of a subcommittee of the appropriate Standing Committee. (*b*) That the constitution of the Senior Hospital Medical Officers and Registrars Groups be amended to provide that the Executive of the Committees of these Groups should function as Subcommittees of the Central Consultants and Specialists Committee; and that these subcommittees should include members of the Groups elected on a Regional basis, together with a minority of members appointed by the Central Consultants and Specialists Committee.

IX. FEDERAL COUNCILS

143. Article 17 lays down that "Federal Councils representative of the Branches in any area outside Great Britain and Northern Ireland defined and approved by the Council may be formed for the purposes specified in the By-laws." These purposes are the "carrying out of the objects of the Association on behalf of Branches collectively within a defined area approved by the Council of the Association." A Federal Council may be corporate or unincorporate, and its constitution, powers, and duties are subject to the approval of the Council.

144. The object underlying the formation of Federal Councils is, in those parts of the Commonwealth which are appropriate, to establish a central body capable of carrying out, in relation to the Government and profession as a whole, functions which in this country would normally be carried out by the Representative Body and Council. The individual Branches represented in the Federal Council have their own status in respect of the government and profession of the area which they cover.

145. There are few countries in the Commonwealth where a Federal Council would be necessary or appropriate, and normally the machinery of the Branch, whether corporate or not, suffices. At the present time there are only two Federal Councils in existence: (*a*) the Australian Federal Council, established as a Federal Committee in 1914 and renamed a Federal Council in 1933; and (*b*) the Southern Rhodesian Federal Council, formed at the time of the incorporation of the Medical Association of Southern Rhodesia in 1950. Formerly there was a South African Federal Council, but this ceased to exist when the South African Medical Association affiliated with the B.M.A.

146. The Committee is of the opinion that Federal Councils as at present constituted are a useful part of the constitution of the Association and should be retained. Accordingly it does not wish to submit any recommendation on this particular item of its report.

APPENDIX A

MEMBERSHIP OF CONSTITUTION COMMITTEE

Sixteen Council Members

Officers of the Association—ex officio

Dr. Alex. H. Hall, Hove (President).
Dr. S. Wand, Birmingham (Chairman of Council).
Dr. I. D. Grant, Glasgow (Chairman of Representative Body).
Mr. L. Dougal Callander, Doncaster (Treasurer).

Chairman of Organization Committee—ex officio

Dr. Ronald Gibson, Northleigh, Kings Worthy, nr. Winchester.

Dr. J. Cottrell, Grimsby.
Dr. H. Guy Dain, Birmingham.
Dr. F. Gray, London.
Dr. E. A. Gregg, London.
Dr. R. Hale-White, London.
Mr. H. H. Langston, Shawford, nr. Winchester.
Dr. J. C. Macarthur, Carluke, Lanarks.
Mr. J. R. Nicholson-Lailey, Taunton.
Dr. J. A. Pridham, Broadway, Weymouth.
Dr. A. Talbot Rogers, Bromley.
Sir J. W. Tudor Thomas, Cardiff.

Eighteen Non-Council Members

Mr. Gordon N. Bailey, Harrogate.
Dr. J. T. Baldwin, Penicuik, Midlothian.
Dr. T. S. Blaiklock, Morpeth.
Dr. H. J. Browne, Barlaston, nr. Stoke-on-Trent.
Dr. Joan Chappell, Edmonton, Middx.
Dr. R. Cove-Smith, London.
Dr. H. J. Cronhelm, Belfast.
Dr. A. B. Davies, Walsall.
Mr. J. L. Kilks, Bournemouth.
Dr. D. L. Gullick, Stevenage, Herts.
Dr. J. Kelman, Perth.
Dr. P. Lyle, Southport.
Sir John McNee, Kings Worthy, nr. Winchester.
Mr. A. M. A. Moore, Upminster, Essex.
Dr. J. H. E. Moore, Leeds.
Mr. J. D. R. Murray, Boldre, Lymington, Hants.
Dr. D. F. Whitaker, Guildford (*deceased*).
Dr. Morgan G. Williams, Cardiff.

APPENDIX B

PROVISIONAL PLAN FOR REORGANIZATION OF BRANCHES ON REGIONAL BASIS

N.H.S. Hospital Region	Proposed Regional Branch	B.M.A. Structure: Divisions in Proposed Branch	B.M.A. Structure: Divisions in Existing Branches and Proposed Groups (Underlined)
ENGLAND AND WALES			
1. NEWCASTLE	NORTHERN (17 Divs.)	Bishop Auckland	*North of England* (12 Divs.)
		Blyth	
		Consett	
		Durham	
		Gateshead	
		Hexham	
		Morpeth	
		Newcastle upon Tyne	
		North Northumberland	
		South Shields	
		Sunderland	
		Tyneside	
		Cleveland	*Tees-side* (4 Divs.)
		Darlington*	
		Hartlepools	
		Stockton	
		Cumberland	*Border Counties*† (1 Div.)

* Darlington Division includes the following R.D.s: Aysgarth, Leyburn, and Whitby, which are in the Leeds R.H.B. area. It is suggested that they remain with Darlington.

† The Border Counties Branch consists of the Cumberland Division (Newcastle R.H.B.) and the Dumfries and Galloway Division (Western R.H.B. Scotland). Both look to Carlisle as the medical centre and should remain an entity—*Border Counties Group*.

N.H.S. Hospital Region	Proposed Regional Branch	B.M.A. Structure: Divisions in Proposed Branch	B.M.A. Structure: Divisions in Existing Branches and Proposed Groups (Underlined)
2. LEEDS	YORKSHIRE (12 Divs.)	Bradford Dewsbury Goole and Selby Halifax Harrogate Huddersfield Leeds Scarborough Todmorden Wakefield, Pontefract, and Castleford York	Yorkshire* (11 Divs.)
		East Yorkshire	East Yorkshire (1 Div.)
3. SHEFFIELD	EAST MIDLAND (16 Divs.)	Buxton* Chesterfield Derby Glossop* West Derby	Derbyshire (5 Divs.)
		Nottingham	Nottingham (1 Div.)
		Leics and Rutland	Leics and Rutland (1 Div.)
		Grimsby Holland Kesteven† Lincoln Scunthorpe	Lincolnshire (5 Divs.)
		Sheffield Doncaster Barnsley Rotherham	Yorkshire (4 Divs.)
4. EAST ANGLIAN	EAST ANGLIAN (9 Divs.)	East Norfolk Norwich West Norfolk	Norfolk (3 Divs.)
		East Suffolk N.E. Suffolk West Suffolk	Suffolk (3 Divs.)
		Cambs and Hunts Isle of Ely Peterborough	Cambs and Hunts (3 Divs.)
5. N.W. METROPOLITAN	NORTH-WEST METROPOLITAN (18 Divs.)	Barnet East Herts* Mid-Herts West Herts	Hertfordshire (4 Divs.)
		N. Beds S. Beds	Bedfordshire (2 Divs.)
		Finchley Hampstead Harrow Hendon Kensington and Hammersmith Marylebone Paddington St. Pancras S. Middlesex Wembley W. Middlesex Willesden	*Metropolitan Counties* (12 Divs.)‡
6. N.E. METROPOLITAN	NORTH-EAST METROPOLITAN (10 Divs.)	Mid-Essex† N.E. Essex S. Essex S.E. Essex	Essex (4 Divs.)
		S.W. Essex City Enfield and Potters Bar N. Middlesex Stratford Tower Hamlets	*Metropolitan Counties* (6 Divs.)‡
7. S.E. METROPOLITAN	SOUTH-EASTERN (14 Divs.)	Bromley Dartford East Kent Folkestone and Dover Maidstone Rochester, Chatham, and Gillingham Tunbridge Wells	Kent (7 Divs.)
		Brighton and Mid-Sussex Eastbourne Hastings	Sussex (3 Divs.)§
		Camberwell Greenwich and Deptford Lewisham Woolwich	*Metropolitan Counties* (4 Divs.)‡
8. S.W. METROPOLITAN	SOUTH AND WEST METROPOLITAN (10 Divs.)	Chelsea and Fulham Lambeth and Southwark Wandsworth Westminster and Holborn	*Metropolitan Counties* (4 Divs.)‡
		Croydon Guildford Kingston Reigate Richmond	Surrey (5 Divs.)
		West Sussex	*Sussex* (1 Div.)§
		Aldershot and Farnham	*Southern* (1 Div.)
	SOUTHERN (10 Divs.)	Guernsey‖ Isle of Wight Jersey‖ Portsmouth Salisbury Southampton Winchester	Southern (7 Divs.)‖
		Bournemouth Dorset	Dorset and West Hants (2 Divs.)
9. OXFORD	SOUTH MIDLAND (5 Divs.)	Northants	Northants (1 Div.)
		Oxford Buckingham* Reading*	Berks, Bucks, and Oxon (3 Divs.)
		Swindon†	Wiltshire (1 Div.)

* It is suggested that the following Divisions of the existing Yorkshire Branch be transferred to the East Midland Branch (Sheffield R.H.B. area): Sheffield, Doncaster, Rotherham, Barnsley.

* The Buxton and Glossop Divisions are in the County of Derbyshire but in the area of the Manchester R.H.B. It is suggested that these Divisions should remain with the East Midland Branch (Derbyshire Executive Council and County Council areas).

† Part of Kesteven Division (S. Kesteven R.D.) is in the Cambridge R.H.B. area. It is suggested it should remain in the Lincolnshire County area as part of the E. Midland Branch.

* East Herts Division is divided into two parts by the boundary between N.E. and N.W. Metropolitan Regions. It is suggested that the Division should remain associated with the Herts County area.

† *Mid-Essex Division.* Saffron Walden U.D. and R.D. are within the area of the East Anglian R.H.B. It is suggested that this area remains with Essex.

‡ *Metropolitan Counties Group.* It is suggested that membership of Group Council and constituencies for representation on B.M.A. Council be based on four quadrants and that the existing Metropolitan Branch Council reconstituted as a Group Council continue to act as a unit covering Divisions in London, Middlesex, etc. The position is so exceptional that the question of retaining the title "Branch" for this Group should be considered. Some Divisions—namely, Kensington and Hammersmith, Lambeth and Southwark, Westminster and Holborn—are in two R.H.B. areas. No change in their areas is suggested.

§ *Sussex Branch.* The Sussex Branch is in two R.H.B. areas; the dividing line also separates two Executive Council areas. The West Sussex Division has therefore been included in the South and West Metropolitan Branch and this implies the discontinuance of the Sussex Branch as a unit. There is no reason why liaison should not be maintained on an *ad hoc* basis for scientific and social meetings or it may become a Group.

‖ *South-West Metropolitan R.H.B. Area.* The Channel Islands will naturally be attached to the reconstituted Southern Branch.

* A small area in the South of the County of Buckinghamshire and a small part of Berkshire are in the N.W. Metropolitan R.H.B. area (Slough, Maidenhead, Windsor). The existing Division boundaries should be retained.

† The greater part of Swindon Division is in the Oxford R.H.B. area, whereas the greater part of the Trowbridge Division of the Wiltshire Branch is in the South-Western R.H.B. area. The Salisbury Division, formerly in the Wiltshire Branch, opted for transfer to the Southern Branch (S.W. Metropolitan area) some time ago. It is suggested that the Wiltshire Branch be dissolved and that the two remaining Divisions should be given the option to join one of the new Regional Branches. It should not be difficult for one Division Executive (possibly Salisbury) to be responsible for arranging for a joint meeting to deal with any matters at County or L.M.C. level. Alternatively the northern half of the County can remain within the Gloucester and Somerset Group.

N.H.S. Hospital Region	Proposed Regional Branch	B.M.A. Structure: Divisions in Proposed Branch	B.M.A. Structure: Divisions in Existing Branches and Proposed Groups (Underlined)
10. S. WESTERN	SOUTH-WESTERN (11 Divs.)*	Gloucestershire†	Gloucestershire (1 Div.)
		Trowbridge	Wiltshire (1 Div.)
		Bath Bristol East Somerset West Somerset	Bath, Bristol, and Somerset (4 Divs.) (*Gloucestershire and Somerset Group*)
		Barnstaple Cornwall Exeter Plymouth Torquay	S. Western (5 Divs.) (*Cornwall and Devon Group*)
11. WELSH	WELSH COMMITTEE (9 Divs.)	E. Denbigh and Flint W. Denbigh and Flint N.W. Wales	*North Wales* (3 Divs.)
		Aberystwyth Cardiff Monmouthshire N. Glamorgan and Brecknock S.W. Wales Swansea	*South Wales and Monmouth* (6 Divs.)
12. BIRMINGHAM	WEST MIDLAND (15 Divs.)	Birmingham Coventry Dudley Nuneaton and Tamworth Rugby S. Warwickshire Sutton Coldfield W. Bromwich and Smethwick	Midland (8 Divs.)
		Shropshire and Mid-Wales	Shropshire and Mid-Wales (1 Div.)*
		Burton-on-Trent North Staffs South Staffs Walsall and Lichfield	Staffordshire (4 Divs.)
		Hereford Worcester and Bromsgrove	Worcestershire and Herefordshire (2 Divs.)
13. MANCHESTER	NORTH-WESTERN (21 Divs.)	Blackburn Blackpool and Fylde Burnley Furness Lancaster* Preston Westmorland†	*North Lancs and Westmorland* (7 Divs.)
		Ashton-under-Lyne Bolton Bury Crewe Hyde Leigh Macclesfield and E. Cheshire Manchester Mid-Cheshire Oldham Rochdale Salford Stockport Wigan	*S. Lancs and E. Cheshire* (14 Divs.)

* Owing to the extensive area and the difficulties of communication the Branch should be divided into two groups: the Devon and Cornwall and the Gloucester and Somerset Group. The two Divisions in Wiltshire may be attached to the latter (see above).

† Part of the Gloucestershire Division Branch is in the Oxford R.H.B. area (Cirencester R.D. and U.D., Northleach R.D., and N. Cotswold R.D.). These have been included with the greater part of the County in the S.W. area.

* A small part of Mid-Wales (Radnorshire and part of Montgomery) is included with the Shropshire and Mid-Wales, and the Worcester and Hereford Branches. It will be "no change" from the point of view of B.M.A. organization if despite the national boundary these areas remain with the existing Branches.

* The R.D.s of Sedburgh, High Bentham, and Bowland in the Leeds R.H.B. area have been included, as at present, with the Lancaster Division.

† Part of the County of Westmorland is in the Newcastle R.H.B. area but has been retained with the Westmorland Division

N.H.S. Hospital Region	Proposed Regional Branch	B.M.A. Structure: Divisions in Proposed Branch	B.M.A. Structure: Divisions in Existing Branches and Proposed Groups (Underlined)
14. LIVERPOOL	MERSEYSIDE (7 Divs.)	Birkenhead and Wirral Chester Liverpool St. Helens Southport Wallasey Warrington	Merseyside (7 Divs.)
15.	ISLE OF MAN	Isle of Man	Isle of Man

SCOTLAND

A. NORTHERN	NORTH OF SCOTLAND (6 Divs.)	Orkney	Aberdeen (1 Div.)
		Caithness Inverness Ross and Cromarty Sutherland Outer Isles	Northern Counties of Scotland (5 Divs.)
B. NORTH-EASTERN	NORTH-EAST OF SCOTLAND (4 Divs.)	Shetland Aberdeen City Aberdeen and Kincardine	Aberdeen (3 Divs.)
		Banff, Moray, Nairn*	Northern Counties of Scotland (1 Div.)
C. EASTERN	EAST OF SCOTLAND (3 Divs.)	Perth	Perth (1 Div.)
		Dundee County of Angus	Dundee (2 Divs.)
D. SOUTH-EASTERN	SOUTH-EAST OF SCOTLAND (5 Divs.)	Fife	Fife (1 Div.)
		City of Edinburgh East and Mid-Lothian S.-Eastern Counties W. Lothian	Edinburgh and S.E. Scotland (4 Divs.)
E. WESTERN	WEST OF SCOTLAND (9 Divs.)	Argyll Ayrshire Dunbartonshire Glasgow Lanarkshire Renfrew and Bute W. Wigtown	Glasgow and West of Scotland (7 Divs.)
		Stirling	Stirling (1 Div.)
		Dumfries and Galloway†	Border Counties (1 Div.)

* It is suggested that the County of Nairn should remain with the N. of Scotland Branch while Moray and Banff should be transferred to N.E. Scotland.

† Dumfries and Galloway should remain in Border Counties Group but integrated with the W. of Scotland Branch.

NORTHERN IRELAND

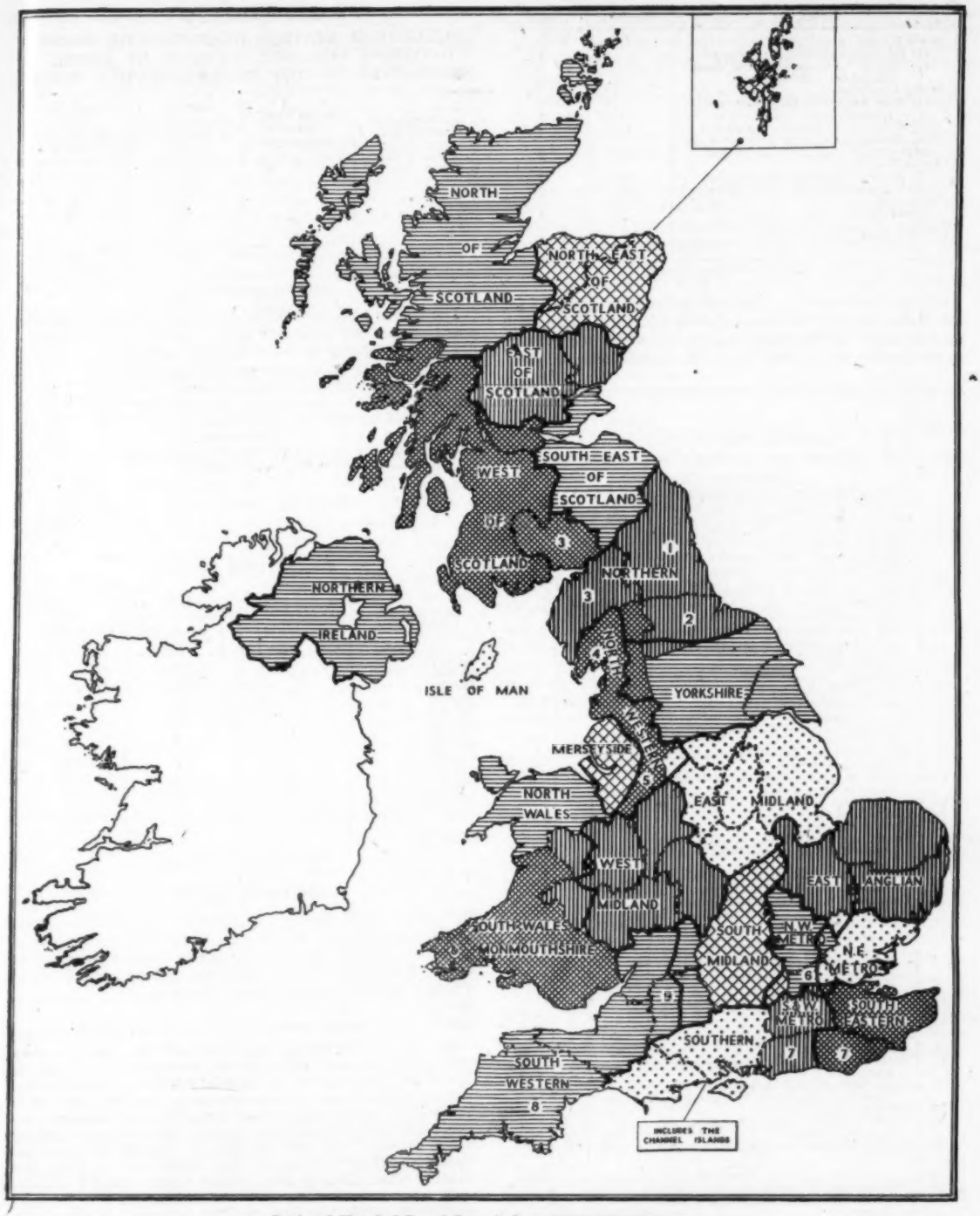
NORTHERN IRELAND HOSPITALS AREA	NORTHERN IRELAND (7 Divs.)	Belfast County Armagh Fermanagh Londonderry North-East Ulster Tyrone West Down	Northern Ireland (7 Divs.)

APPENDIX C

REVISION OF CONSTITUENCIES FOR ELECTION OF 40 MEMBERS OF COUNCIL

*Suggested Constituencies**

Group	Members	Seats
1. *Northern*	2,129	2
2. Yorkshire	2,165	2
3. East Midland	2,622	3
4. *East Anglia*	1,087	1
5. Home Counties:		
(1) Divisions in Herts and Beds	822	1
(2) *Divisions in Middx*	1,877	2
(3) *Marylebone Division*	958	1
(4) Divisions in London (see p. 89)	1,411	1
6. Essex	1,885	2
7. South-Eastern	2,580	2
8. South and West Metropolitan:		
(1) Divisions in London (see p. 89)	1,222	1
(2) " " Surrey—West Sussex Division	2,154	2
9. Southern: *Salisbury Division. Divisions in Hants and Dorset, Isle of Wight (Channel Islands)*	1,575	1
10. *South Midland*	1,651	1



Regional Hospital Board Boundaries ——————

Proposed New Branch Boundaries (delineated by shading) ——————

Existing Branch Boundaries - - - - - - - -

Groups (indicated by numerals):

1. North of England Group
2. Tees-side Group
3. Border Counties Group.
4. North Lancs and Westmorland Group.
5. South Lancs and East Cheshire Group.
6. Metropolitan Counties Group.
7. Sussex Group.
8. Devon and Cornwall Group.
9. Gloucester and Somerset Group.

Group	Members	Seats
11. South-Western:	2,543	
(1) Divisions in Devon and Cornwall ..		1
(2) .. .. Gloucestershire, Somerset, Bristol, and Wiltshire ..		2
12. Welsh Committee:		
(1) *N. Wales Branch, Shropshire and Mid-Wales Division*	743	1
(2) *S. Wales and Monmouth Branch* ..	1,537	1
13. West Midland (excluding Shropshire and Mid-Wales)	2,793	3
14. North-Western:	848	1
(1) *N. Lancs and Westmorland Group* ..	2,095	2
(2) S. Lancs and E. Cheshire Group ..	1,524	1
15. Merseyside	55	1
Isle of Man		5
Scotland		2
Northern Ireland		

* Italics indicate no change.

For the purpose of comparison the existing grouping for the election of the "40 members" of Council is given, with an indication of the constituencies in which the existing groups would be included under the revised scheme.

Group		Members	Seats	Group under Revised Scheme
	England and Wales			
1	North of England Branch; Tees-side Branch	1,925	2	1
2	East Yorkshire Branch; Yorkshire Branch	2,989	3	2, 3
3	North Lancashire and Westmorland Branch	848	1	13
4	Divisions in Cheshire: Birkenhead and Wirral; Chester; Crewe; Hyde; Macclesfield and East Cheshire; Mid-Cheshire; Stockport; Wallasey	1,014	1	13, 14
5	Lancashire Divisions of Merseyside Branch; Liverpool; St. Helens; Southport; Warrington; Isle of Man Branch	1,149	1	13, 14
6	Lancashire Divisions of South Lancashire and East Cheshire Branch: Ashton-under-Lyne; Bolton; Bury; Leigh; Manchester; Oldham; Rochdale; Salford; Wigan	1,484	1	13
7	Derbyshire Branch; Nottinghamshire Branch; Lincolnshire Branch; Leicester and Rutland Branch	1,798	2	3
8	Midland Branch	1,708	1	12
9	Staffordshire Branch; Worcester and Hereford Branch	1,086	1	12
10	Berks, Bucks, and Oxford Branch; Northamptonshire Branch	1,396	1	9
11	Cambs and Hunts Branch; Norfolk Branch; Suffolk Branch	1,087	1	4
12	Metropolitan Counties Divisions in Middlesex	2,048	2	5–8
13	Marylebone Division	958	1	5–8
14	Tower Hamlets Division; City Division; Stratford Division; South-West Essex Division	1,130	1	5–8
15	Hampstead Division; St. Pancras Division; Westminster and Holborn Division ..	948	1	5–8
16	Chelsea and Fulham Division; Kensington and Hammersmith Division; Paddington Division	961	1	5–8
17	Camberwell Division; Greenwich and Deptford Division; Lambeth and Southwark Division; Lewisham Division; Wandsworth Division; Woolwich Division	1,130	1	5–8
18	Hertfordshire Branch; Essex Branch; Bedfordshire Branch	1,577	1	5, 6
19	Surrey Branch	1,824	2	8
20	Kent Branch	1,414	1	7
21	Sussex Branch	994	1	7, 8
22	Southern Branch; Dorset and West Hants Branch	1,575	1	8
23	Bath, Bristol, and Somerset Branch; Gloucestershire Branch; Wiltshire Branch	1,544	2	10, 9
24	South-Western Branch	999	1	10
25	North Wales Branch; Shropshire and Mid-Wales Branch	736	1	11, 12
26	South Wales and Monmouthshire Branch	1,524	1	11
	Scotland			
27	Aberdeen Branch; Dundee Branch; Northern Counties of Scotland Branch; Perth Branch	1,307	1	A, B, C
28	Edinburgh and S.E. of Scotland Branch; Fife Branch	1,488	1	D
29	Glasgow and West of Scotland Branch (Glasgow Division)	1,131	1	E
30	Glasgow and West of Scotland Branch (County Divisions); Border Counties Branch; Stirling Branch	1,952	2	E
	Northern Ireland			
31	Northern Ireland Branch	1,267	2	No change

APPENDIX D

SUGGESTED REVISED GROUPING OF HOME DIVISIONS FOR APPOINTMENT OF REPRESENTATIVES TO THE REPRESENTATIVE BODY

Membership of Constituencies	No. of Reps. to be Appointed*	No. of Constituencies in Membership Group	Reps. in Each Membership Group
Below 50	1	7	7
50–199	1	117	117
200–449	2	64	128
450–699	3	10	30
700–949	4	3	12
950+	5	3	15
		204	309

* Maximum 5 representatives.

The loss in representation to the Divisions under the proposed scheme for reduction in the size of the Representative Body is shown in the following statement:

(*a*) *Divisions with membership of under* 200 (124)			
30 Divisions will lose 1 Representative			30
(*b*) *Divisions with membership of* 200 *to* 499 (68)			
22 Divisions will lose 1 Representative ..	22		
17 " " " 2 Representatives ..	34		56
(*c*) *Divisions with membership of* 500 *or more* (12)			
2 Divisions will lose 2 Representatives ..	4		
3 " " " 3 " ..	9		
3 " " " 4 " ..	12		
3 " " " 5 " ..	15		
1 Division " " 6 " ..	6		46
Total			132

Present (1956) Position

Membership of Constituencies	No. of Reps. to be Appointed	No. of Constituencies in Membership Group	Reps. in Each Membership Group
Below 50	1	7	7
50–149	1	90	90
150–249	2	53	106
250–349	3	23	69
350–449	4	15	60
450–549	5	6	30
550–649	6	3	18
650–749	7	1	7
750–849	8	2	16
850–949	9	1	9
950–1,049	10	2	20
1,050–1,150 ..	11	1	11
		204	443

HOSPITALITY

Will any medical families, particularly, but not necessarily, in the London area, willing to receive Continental doctors' children as paying guests please get in touch with Brigadier H. A. Sandiford, Medical Director, International Medical Visitors' Bureau, B.M.A. House, Tavistock Square, London, W.C.1.

Reciprocal social security agreements have been signed between the United Kingdom (Great Britain, Northern Ireland, and the Isle of Man) and the Federal German Republic. One agreement enables people going from one country to another to have their employment records and insurance contributions in both countries taken into account if they have to claim unemployment benefit in either country. The other provides for national insurance and industrial injuries insurance in both countries to be taken into account when claiming benefit under either country's scheme; each country also undertakes to pay certain benefits in the other country to people who have qualified for them. A protocol on health services entitles people from the United Kingdom employed in Germany to take advantage of German health services in return for facilities available to Germans in this country. The agreements will come into effect after ratification.

Reciprocal social security agreements, now exist between the United Kingdom and France, Italy, the Netherlands, Luxembourg, Denmark, Switzerland, Sweden, Australia, New Zealand, the Irish Republic, the Channel Islands, and Malta. Negotiations with other countries are in progress, and agreements are expected shortly with Belgium, Norway, and Israel.

REPORT ON MALTA

DISPUTES IN GOVERNMENT HEALTH SERVICE

About a year ago relations between the Malta Government and its medical employees were severed by the doctors' resigning from the service.[1] This break was the culmination of a variety of disputes, the chief being the Government's declared intention to staff its medical service with whole-time salaried officers without the right to private practice. The doctors had for some time had the feeling, as was then said, that they were "being pushed around by the politicians." The B.M.A. and the British Medical Guild gave advice and financial support to their Maltese colleagues. Conciliation between the parties was achieved after nine days with the help of, among others, Mr. J. L. Gilks, chairman of the B.M.A.'s Overseas Committee. The doctors withdrew their resignations, and it was agreed that a commission from the United Kingdom should be appointed to review the medical service and make recommendations on its terms of employment.[2] The Commission was appointed last November, consisting of Mr. L. Farrer-Brown (chairman), Sir Harold Boldero, and Mr. J. B. Oldham.[3] It has now issued its report.

Commission's Recommendations

The first recommendation is that the restoration of good will between the Government and medical profession is essential. The need for this is apparent from the Commission's personal observation that "suspicion was rife, evil motives were assumed and good intentions ignored; generally there was an absence of mutual understanding and respect." But a desire for good will was noted on both sides.

Administration was considered to be too centralized, and there were insufficient safeguards against administrative decisions being improperly determined by political partisanship. Changes in the administrative headquarters are recommended so that authority shall be properly delegated, and an advisory and executive board should be formed to advise the Minister on matters which affect the medical service in all its aspects.

A shortage of consultants and registrars was found. Consequently the Commission recommends expanding the arrangements for training them, though holding that it would be unwise to start units in the narrower medical specialties such as neurosurgery and thoracic surgery. Proposals for scholarships are made in order to help in the training of more consultants. Whole-time clinical professorships are not recommended "at the present stage of development." A number of detailed recommendations are made about the hospitals, where conditions were found to range from underuse to gross overcrowding, from the modern to the mediaeval, and from the cheerful to the dreary. Far too few nurses are available, and the Commission recommends that "the radical improvement of the nursing service should be a top priority."

Free Choice of Doctor

The general medical services run by the Government for poor people are carried out by doctors, paid by salary, who charge nothing to the poor and private fees to those who can pay. They are expected to know whether their patient's income is small enough to entitle him to free treatment. The poor in any particular district have to go to the medical officer for that district. The Commission found that these arrangements were "out of harmony with current feelings." They propose a system under which the necessitous patient is free to choose his general practitioner instead of being allotted to the district medical officer. The doctor would be remunerated by the Government, possibly on a capitation basis. This method of payment is thought to be more practicable than a method based on services rendered. The patient's inability to pay for medical attention should be assessed, the Commission recommends, by a Government body just as it is already assessed for eligibility to receive free hospital care.

The Commission condemns the present system under which whole-time national insurance medical officers issue all certificates to claimants of national insurance benefits. They should be issued by the doctor in charge of the patient, it recommends.

At present no body exists comparable to the General Medical Council in Great Britain to control the educational and disciplinary affairs of the profession, and the Commission recommends the creation of a medical council to take over these functions. Appeals might be made from such a council to the Malta Court of Appeal, and the council might be presided over by a judge.

As to details of remuneration, the Commission reports that a revised scale of fees is urgently needed. "The delay is unfair to the doctors and it is hard to find a justification for it."

[1] *British Medical Journal*, 1956, **1**, 911.
[2] *British Medical Journal Supplement*, 1956, **1**, 263.
[3] Ibid., 1956, **2**, 181.

Correspondence

Psychiatric Out-patient Departments

SIR,—Those who work in hospitals whose psychiatrists are active members of the staff, rather than visiting consultants whose main allegiance is to the mental hospital, will support Dr. J. C. Sawle Thomas's plea (*Supplement*, February 9, p. 62) that all hospitals should enjoy this happy arrangement. It is hard for the psychiatrist to work closely with his colleagues if he is not in every sense a real member of the staff. Staffing arrangements which encourage segregation ignore the complaint of Plato: "The greatest mistake in the treatment of sickness is that there exist physicians for the body and physicians for the soul and yet the two are one and indivisible."

If patients are not to become just collections of organs in which different specialists are interested, all doctors, and not only psychiatrists, should know what may be happening to their patients in departments other than their own. To encourage this I think a chronological type of case record is desirable, for it shows the patient's progress in all departments from day to day. Psychiatric and other very specialized records can be on separated sheets, but the fact that the psychiatrist is seeing the patient should be recorded, by a rubber stamp for example, on the main case sheet. This is done in many hospitals, but some still have quite separate records for each department, so that one doctor may be in ignorance of what the other is doing. Dr. Sawle Thomas says that the psychiatric department of a general hospital is at least as important as that of any other specialty. If judged by the amount of human suffering it has to handle some would say that it is more important, for it is still as true now as it always was that the sufferings of the mind are more severe than the pains of the body. It is to be hoped that Dr. Sawle Thomas's campaign will lead to the abolition of "apartheid" of psychiatrists in general hospitals.—I am, etc.,

Enfield, Middlesex. C. ALLAN BIRCH.

SIR,—I support strongly Dr. J. C. Sawle Thomas's plea (*Supplement*, February 9, p. 62) for the development of psychiatric departments in general hospitals and for their closer integration with these hospitals. We lag far behind several European countries and parts of North America in this respect. For example, in Scandinavia it is the rule for general hospitals to have large psychiatric departments with about 100 beds available for psychiatric patients. In the new Montreal General Hospital there is an excellent arrangement in which various diagnostic and therapeutic psychiatric facilities are used by out-patients, day hospital patients, and ordinary in-patients alike. I have a vivid recollection of

wartime service in R.A.F. hospitals in which the most fruitful collaboration developed between the psychiatrists on the one hand and on the other the general surgeons and physicians, of whom some said that they had never realized the possibilities in this direction before. The psychiatric departments of general hospitals are usually much better situated geographically than mental hospitals for the development of day hospitals, night hospitals, and other services designed to maintain and further contact with the community.

Disused wards and other hospital buildings, adjoining old houses, and similar premises can readily be adapted for outpatient, day hospital, and other therapeutic uses, so that expansion need not wait on a large programme of capital works, but could proceed apace given the will and enthusiasm from hospital staffs and management authorities and fairly moderate financial encouragement from the Ministry.—I am, etc.,

Crockham Hill, Kent. A. HARRIS.

Salaries of Part-time Radiographers

SIR,—As a radiographer who has recently resumed part-time employment, I can most heartily endorse the criticisms expressed in Dr. F. Friend's letter (*Supplement*, January 26, p. 45).

In order to be able to work away from my home it is necessary to employ a competent "baby-sitter," and her wages, combined with the cost of travelling and of lunch, leave little out of the meagre salary now paid to part-time radiographers. Other correspondents have stressed the lack of radiographers and the fact that this has resulted in some departments only being able to operate under conditions of extreme difficulty. There must be many of my profession who gave up their posts after marriage and would now be glad to resume their work if this offered a reasonable reward. The lack of consideration given to the remuneration of part-time radiographers is an example of the short-sighted policy that has characterized the recent negotiations of salary scales for medical auxiliaries.—I am, etc.,

Ruislip, Middlesex. V. M. GORDON.

Remuneration Claim

SIR,—At this vital stage in the negotiations with the Minister over the adjustment of our remuneration I find myself quite intolerant of the views expressed by your correspondents Drs. A. C. Gordon Ross and George H. Pearson (*Supplement*, February 2, p. 49).

Dr. Ross suggests that this is not an opportune moment to press our claim. I wonder if Dr. Ross is aware that the Minister himself admitted to the Negotiating Committee that during the past ten years there has only been a period of two to four months when a claim could have been submitted without causing the Government financial embarrassment? Has Dr. Ross any reason to suppose that conditions will be any more propitious during the next ten years? Dr. Pearson makes an even more preposterous remark when he suggests that the profession is "scrambling for money." After waiting patiently for nearly six years and exercising admirable restraint, this point of view defies understanding. Dr. Pearson then exhorts us to improve our service to our patients, and give them better value, rather than this "scrambling for money." We all admire idealism and self-sacrifice, but at this juncture Dr. Pearson's brand is pure humbug.

Let us face the hard fact that the future of medicine under the N.H.S. is at the cross-roads. Weakness now may well be disastrous. It will be a hard struggle to persuade the Government that it must honour its obligations, and never have tenacity of purpose and complete unity in the profession been more important than at the present time. We owe this not only to ourselves but to the future generations who will follow after us. Our immediate objectives must be: (1) to secure the unconditional acceptance of Spens by the Government, with adjustments to the central pool at agreed regular intervals; (2) to insist that polities be divorced from the Health Service. Later, further refinements can be introduced. When our claim has finally been implemented may I suggest that the salary adjustments of registrars and junior hospital staffs, not forgetting practice expenses of the small-list practitioners, be given first priority?—I am, etc.,

Caerphilly. D. R. V. PRYS-JONES.

SIR,—Let us cast aside all personal and selfish interests to join forces for the good of the profession as a whole, now and in the future. Since 1951 the value of the pound has fallen 25% and the salaries of our secretaries, cleaners, etc., have increased as have all other unavoidable expenses. There is no reasonable argument against the justice of our claim.

Two questions seem to have arisen: (1) Should we set an example to the community in not asking for an upward adjustment to our remuneration? (2) Can the country afford it? On the first issue, does anyone still believe our example would be followed? We have refrained for four years in tendering a claim, and what section of the community has done likewise? Financial experts differ in their analysis of the monetary situation. A view supported by Sir Stafford Cripps was that by increasing the tax on tobacco he would curb inflation. Events proved this to be completely false, and in fact this resulted in what he hoped to avoid most, because workers demanded and received more money to meet the rise in their cost of living; not, mark you, to meet the Government's cost-of-living index, as this excluded tobacco in its calculations. Governments themselves are mostly responsible for inflation. High direct and indirect taxation may be deflationary in theory by mopping up spending power, but in practice the effect is the exact opposite, as people demand more money to pay for these taxes.

Regarding (2) above, of course the country can afford it. Fortunately, the cost of the whole Health Service will soon be saved by cutting down the appalling waste on conventional weapons. With a little imagination and determination a similar sum could be saved by more careful budgeting. One of the curses of this country to-day is that there are too many people spending with scant care other people's money. The people are having the Health Service on the cheap, at the doctor's expense. Massive withdrawal from the Service could result in the patients having to pay 5s. per consultation and 10s. per visit. This would almost double our incomes and possibly cause widespread strikes in industry. The Government must honour its obligations to the medical profession. I am optimistic about the outcome, as I have faith in the spirit and determination in the interests of justice of the majority of the medical profession.—I am, etc.,

Chesterfield. KENNETH E. MCIVER.

SIR,—I am whole-heartedly with the Negotiating Committee in maintaining that there is a moral obligation implied in the Spens reports to maintain in the future a proper social and economic status for general medical practitioners and specialist practitioners. That a definite contractual obligation exists to agree to increased remuneration is not, of course, accepted by the Government. And we are not so sure ourselves that this obligation could be enforced by action in the courts. Realization of this comes rather late in the day. That being so, and considering the present economic circumstances of the country, it would seem that we are not on very secure ground. That this may be an unpalatable view to many I am well aware, but this is a time for honest expression of all shades of view. The times are crucial and we cannot afford to blunder into defeat.

There is much brave talk these days by our leaders about "being on the eve of severe conflict with the State," about the profession getting "geared for action," about "weapons sharpened now," etc. And our negotiations with the

Government are being conducted under the threat of withdrawal from the Service. I shudder when I hear that the view is held that withdrawal (resignation or strike action) would force the Government to capitulate within a week. This is dangerous advice. No Government can allow itself to be bent to the will of any section of the community. Furthermore, do our negotiators really believe, as they profess, that general practitioners would resign from the Service if called upon? Do we general practitioners really mean that we would resign, refuse our patients sickness certificates, leave them to pay for their medicines, suffer all the attendant discomfitures of our action? Of course we would not. And the Government knows it. High time that our negotiators did.

What is to be done, then? Depart at once from all talk and threats of withdrawal or we will end in disaster. Strike action is gutter talk, unworthy of our profession. Let us negotiate without threats. And let us never mention withdrawal again until we have an alternative and better service to offer. The practice of a little self-criticism at times would do us all a lot of good.—I am, etc.,

Perth. R. RITCHIE.

A Layman's View

SIR,—As a non-medical professional worker whose standard of living has been declining at least as rapidly as the average doctor's, I read the weekly correspondence in the *Supplement* with interest and a good deal of sympathy. Perhaps you will forgive me making a comment from outside, bearing in mind that as a member of the public I shall in due course pay my share of whatever increased remuneration you are able to obtain.

I suppose most patients look on doctors, as I do, as being *relatively* well paid, and the average figures quoted seem to bear this out, even though they may conceal pockets of real hardship. (Many of us have to make do on much less than £1,000 a year, let alone £2,000.) But as patients we are also aware that doctors are usually overworked, often harassed by lack of facilities, and frequently frustrated. I therefore welcome letters such as Dr. G. A. F. Quinnell's (*Supplement*, February 2, p. 51), advocating reduction of lists to 2,500, tax-free allowances for practice expenses, and extension of group practice. Of course, these and similar changes will take time, and you cannot be expected to *drop* your claim for more pay immediately. But, if your campaign could be shown to touch on these wider aspects as well as the £500 a year, I feel sure you would gain much greater public support—and that may make all the difference in your negotiations with the powers-that-be.

I think most people at the receiving end value the N.H.S. as a great achievement. Perhaps it is natural that its weaknesses are brought home more forcibly to doctors than to others. To sum up, in my view confidence between doctor and patient can be benefited by practical efforts to improve the N.H.S., but is certain to be impaired by attempts to abolish it or to replace it by some untried alternative.—I am, etc.,

Stanmore, Middlesex. C. H. R. MEREDITH.

Saving on Prescribing

SIR,—Might one who retired from practice over ten years ago make some criticism, and offer a means of bringing the Minister of Health and the profession more closely together on the vexed question of increased remuneration? When I was in practice I remember being sternly reproved by our regional medical officer because the average cost of my prescriptions was a fraction over 5d. each. I was urged to use cheaper ingredients of equivalent therapeutic value—or else. To-day I am informed that the average cost is about 5s. per prescription. I know that in the bad old days the chemist was disgracefully paid, but the present increase in their remuneration and the extra cost of *B.P.* preparations does not account for such a disparity as we see to-day.

If I might offer an opinion, I am convinced that the practice of ordering expensive proprietary preparations, which are usually labelled with incomprehensible names and guaranteed to perform miracles, in lieu of careful diagnosis and advice has magnified the drug bill beyond all reason. I would exclude antibiotics from this discussion, but the use of these, too, is grossly abused. If these proprietary preparations are essential to the well-being of the public one ought to use them, but do most of them cut short illness or preserve life any more effectively than simpler remedies such as are listed in the *B.P.C.*? A case in point. A child suffering from a small spot of impetigo on the corner of his mouth had prescribed for it ½ oz. (15.5 g.) of cortisone ointment which cost about 30s., when a pennyworth of white precipitate ointment would have done just as well. Let our teachers, both in hospital and in lectures, lay special stress on the utmost economy with efficiency.

Hospital research is a different matter; medical science must advance. I am discussing the average prescriptions issued by the profession to the tune of millions per annum to N.H.S. patients. Why not observe a self-denying ordinance for a period of, say, 12 months, restrict expensive prescribing to a necessary minimum, and then ask for an increase in pay, which will have been well earned, instead of recriminations and threats of strike action which ill become us? The medical profession has a genuine grievance, but this is shared by all professional classes, especially the salaried groups. The underlying cause is inflation and excessive taxation. Let us not forget that the health section of our welfare scheme is not covered by weekly contributions, but directly by taxation. If we are extravagant we are spending our own money as well as that of our neighbours. A drive for economy in prescribing and in many other branches of the medical service would be of great benefit to our whole community.—I am, etc.,

Holyhead. HOWARD ENGLISH.

Drugs for Private Patients

SIR,—It is manifestly absurd that private patients should be deprived of the right to receive drugs for which they pay by enforced contributions to the National Health Service. And yet one of the frequently reiterated complaints about the Service is that it has given rise to an enormous and quite unnecessary, if not actively harmful, increase in the consumption of medicine by the populace at large. Any right gained by private patients to receive their drugs under the National Health Service would still further add to this undesirable feature of the Service, and I venture to think that the solution lies in the opposite direction and that National Health Service patients should, except when under hospital treatment, be made to bear a substantial part of the cost of *National Formulary* medicine (say 50%) and the entire cost of proprietary preparations. In this way it might be possible to remedy an obvious injustice without further adding to an already undesirable state of affairs.—I am, etc.,

London, S.W.7. J. N. LORING.

Item-of-service Payment

SIR,—Let those who advocate a "payment for item of service" beware. They may not be aware of the current practice of executive councils in dealing with forms E.C. 24 (rev.). In addition to a preliminary scrutiny these are later compared with records at local maternity hospitals. Add to this the fact that municipal midwives now complete a form stating whether the G.P. was actually present during labour. The situation is fraught with bureaucratic possibilities—little bowler-hatted men carefully inspecting Granny Smith's *derrière* to make sure that she has, in fact, had her weekly gold injection in her right buttock and not in her left, as claimed in some form or other.

The capitation system has glaring defects, but let us not abandon it in favour of something much worse.—I am, etc.,

Barrow-in-Furness. J. H. C. CORR.

S.H.M.O.s and Consultant Appointments

SIR,—I thank the many S.H.M.O.s who wrote to me following my letter (*Supplement*, February 9, p. 61). S.H.M.O.s who are doing consultant work have the opportunity of having their posts considered for payment at consultant rates as mentioned in the notice "S.H.M.O.s in Consultant Posts (p. 60). All S.H.M.O.s should bring this notice to the attention of their colleagues whether B.M.A. members or not. Application forms duly completed must be returned to the Secretary, British Medical Association, by March 2, or it may be too late.—I am, etc.,

G. WARING ROBINSON,
Chairman,
Leicester. S.H.M.O. Group Executive Committee.

H.M. Forces

ROYAL AIR FORCE

Air Vice-Marshal P. B. L. Potter, C.B.E., Q.H.S., has been granted the acting rank of Air Marshal.

Air Commodores L. M. Corbet, C.B.E., and A. F. Cook, C.B.E., Q.H.P., have been granted the acting rank of Air Vice-Marshal.

Group Captain T. C. Macdonald, A.F.C., to be Air Commodore.

Group Captain J. Kemp has retired.

Wing Commanders H. L. Willcox, P. A. Cooper, G. H. Stuart, P. A. Lee, A. S. Amsden, J. R. R. Jenkins, H. P. R. Smith, A.F.C., A. R. C. Young, O.B.E., and R. C. Jackson to be Group Captains.

Squadron Leader K. Bazarnik, A.F.C., to be Wing Commander.

Flight Lieutenants I. A. McIntosh, J. A. Hill, J. P. McRory, and P. R. Wagner to be Squadron Leaders.

H. B. Kelly to be Squadron Leader.

Flight Lieutenants C. P. Handforth, P. M. Healy, A. Lyon, A. G. May, M. C. Batcheldor, R. Stalker, and R. D. Merson have been transferred to the Reserve, retaining the rank of Squadron Leader.

Flight Lieutenant F. J. Davies has resigned his commission, retaining the rank of Squadron Leader.

ROYAL AUXILIARY AIR FORCE

Squadron Leader E. R. Spicer has resigned his commission, retaining his rank.

BRITISH MEDICAL GUILD

PLYMOUTH DIVISION

A meeting representing all branches of the profession within the Division area was held in Plymouth on January 22. The attendance numbered over 150. Dr. Noy Scott was elected to the chair. A resolution was passed unanimously that "this meeting supports with confidence the Negotiating Committee in the steps already taken to maintain the implementation of Spens terms for settlement of the remuneration claim."

Association Notices

Diary of Central Meetings

FEBRUARY

27	Wed.	Maternity Medical Services Committee, 2 p.m.
28	Thurs.	Compensation and Superannuation Committee, 2 p.m.
28	Thurs.	Non-professorial Group Committee, 2 p.m.

MARCH

1	Fri.	Assistants and Young Practitioners Subcommittee, G.M.S. Committee, 2 p.m.
4	Mon.	Alternative Edition Subcommittee, Joint Formulary Committee, 11 a.m.
5	Tues.	Editorial Subcommittee, Joint Formulary Committee, 11 a.m.
6	Wed.	Training Subcommittee, Occupational Health Committee, 10 a.m.
7	Thurs.	Ingleby Evidence Committee, 11.30 a.m.
7	Thurs.	Journal Committee, 2 p.m.
7	Thurs.	Charities Committee, 2.30 p.m.
8	Fri.	Overseas Committee, 2 p.m.
12	Tues.	Amending Acts Committee, 2 p.m.
14	Thurs.	International Relations Committee, 2 p.m.
14	Thurs.	Organization Committee, 2 p.m.
21	Thurs.	G.M.S. Committee, 10.30 a.m.

Branch and Division Meetings to be Held

BLACKBURN DIVISION.—At White Bull Hotel, Church Street, Blackburn, Tuesday, February 26, 8.15 p.m., meeting. Address by Dr. P. H. Addison: "The Law as it Affects the Doctor."

CARDIFF DIVISION.—At B.M.A. Welsh House, 195, Newport Road, Cardiff, Wednesday, February 27, 8.25 p.m., general meeting; 8.30 p.m., B.M.A. Lecture by Dr. V. D. Allison: "Changing Face of Infection."

DEWSBURY DIVISION.—At Board Room, General Hospital, Moorlands Road, Dewsbury, Friday, March 1, 8.30 p.m. B.M.A. Lecture by Dr. J. D. Allan Gray: "Antibiotics."

DORSET DIVISION.—At Chest Clinic, Dorchester, Friday, March 1, 8.30 p.m., general meeting. Mr. A. Alexander, D.V.S.M.: "Veterinary Medicine, with Special Reference to Communicable Diseases." A film on foot-and-mouth disease will also be shown. All veterinary surgeons in Dorset are invited.

EASTBOURNE DIVISION.—At Hellingly Hospital, Tuesday, February 26, 8 for 8.30 p.m., clinical meeting. Papers by (1) Dr. D. Krausz: "Some Aspects of E.C.T."; (2) Dr. H. V. W. Elwell: "Psychotherapy"; (3) Dr. R. M. Ellison: "Drugs for the Elderly."

EAST DENBIGH AND FLINT DIVISION.—At Wynnstay Arms Hotel, Wrexham, Thursday, February 28, joint meeting in conjunction with Wrexham Clinical Society. 7 for 7.30 p.m., dinner; 8.15 p.m., B.M.A. Lecture by Professor A. G. Watkins: "Paediatrics in the West Indies."

ENFIELD AND POTTERS BAR DIVISION.—At King's Head Hotel, Market Place, Enfield, Wednesday, February 27, joint meeting with Enfield Solicitors' Association. 8.15 p.m., reception; 9 p.m., B.M.A. Lecture by Mr. Norman Richards, Q.C.: "The Doctor's Contact with the Law." Medical and legal guests and members of the North Middlesex and Barnet Divisions are invited.

LEWISHAM DIVISION.—At Lewisham General Hospital, Friday, March 1, 8.30 p.m., meeting. Dr. C. A. Holman: "Treatment of Haematological Problems in General Practice."

MAIDSTONE DIVISION.—At Royal Star Hotel, Maidstone, Saturday, March 2, 3 p.m., illustrated lecture by Mr. Ronald B. Haynes: "Studies of Bird Life in Kent."

MANCHESTER DIVISION.—At Fallowfield Hotel, Wilbraham Road, Manchester, 14, Tuesday, February 26, 8.30 p.m., meeting. Medical Forum—subject for discussion: "That Medical Education To-day Does Not Adequately Prepare Students for Medical Practice." To be introduced by Drs. H. W. Ashworth, L. D. Harris, R. F. Logan, W. T. Westwood, and M. P. Winstanley.

MARYLEBONE DIVISION.—At Medical Society of London, 11, Chandos Street, W., Thursday, February 28, 8.45 p.m., meeting. Address by Dr. W. D. Nicol: "Tranquillizers—Their Use and Abuse." A general discussion will follow. Members of Paddington, St. Pancras, City, and Hampstead Divisions are invited.

NORTH GLAMORGAN AND BRECKNOCK DIVISION.—At East Glamorgan Hospital, Church Village, Pontypridd, Thursday, February 28, 7.30 p.m., joint meeting with Rhondda Medical Society. Symposium: "Pneumoconiosis." Panel of speakers, Professor J. Gough, Dr. A. L. Cochrane, Dr. A. Caplan, and Dr. J. D. Ball.

ROCHDALE DIVISION.—At Turner Hall, Birch Hill Hospital, Littleborough, Rochdale, Wednesday, February 27, 8.30 p.m. B.M.A. Lecture by Mr. A. Lawrence Abel: "Common Diseases of the Rectum."

SOUTH ESSEX DIVISION.—At Nurses' Lecture Theatre, Oldchurch Hospital, Romford, Friday, March 1, 9 p.m., meeting. B.M.A. Lecture by Dr. Hugh Clegg (Editor, *British Medical Journal*). Dr. Clegg will give a short lecture on the Publishing Activities of the *B.M.J.*, and invites questions on the *Journal*, and all its works, after the lecture.

SUTTON COLDFIELD DIVISION.—(1) At Town Hall, Sutton Coldfield, Wednesday, February 27, 9 p.m. to 1 a.m., annual dance. (2) At Good Hope Hospital, Rectory Road, Sutton Coldfield. Friday, March 1, 9.15 p.m., meeting. B.M.A. Lecture by Sir Walter Mercer: "Surgery in Russia" (illustrated by cine-film and lantern slides). Members are invited to take lay guests.

WEMBLEY DIVISION.—At Board Room, Wembley Hospital, Tuesday, February 26, 9 p.m., meeting. Talk by Mr. David Trevor: "Backache." Members of Hampstead, Harrow, Hendon, and Willesden Divisions are invited.

WEST BROMWICH AND SMETHWICK DIVISION.—At the Sandwell Hotel, West Bromwich, Tuesday, February 26, 8 p.m., meeting. B.M.A. Lecture by Mr. Harold Dodd: "Venous Disorders of the Lower Limb."

WESTMINSTER AND HOLBORN DIVISION.—At Board Room, St. George's Hospital, Hyde Park Corner, S.W., Wednesday, February 27, 8.15 p.m., meeting. B.M.A. Lecture by Dr. Hugh Gainsborough: "Psychosomatic Medicine."

WIGAN DIVISION.—At Lewis's Restaurant, Wallgate, Wigan, Thursday, February 28, 8 p.m., meeting. Lecture by Dr. F. M. Rose: "The Place of the College of General Practitioners in Modern Medicine."

Meetings of Branches and Divisions

ENFIELD AND POTTERS BAR DIVISION

Dame Edith Russell-Smith, Deputy Secretary, Ministry of Health, was the guest of honour at the annual dinner of the Division held on January 19. Dr. G. G. Doel, chairman, presided.